EIGHTH ANNUAL REPORT

Sanitary Commissioner with the Government of India,

1871,

WITH

APPENDICES AND RETURNS OF SICKNESS AND MORTALITY AMONG THE BRITISH TROOPS IN INDIA, AND ALSO AMONG THE NATIVE TROOPS AND PRISONERS IN THE BENGAL PRESIDENCY, FOR THE YEAR.

CALCUTTA:
OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING.
1872.

NOTE.

In addition to the appendices which have been mentioned in the body of this Report, Dr. Bryden has contributed a valuable paper on the influence of age and length of service in India on the mortality and invaliding of the European army in India. The statistics which he has furnished, and which are drawn from the three Presidencies, I may observe, fully bear out the general conclusions which were arrived at in his paper attached to last year's Report. The subject is of too great importance to be dealt with in a brief note; the facts which Dr. Bryden adduces have a very important bearing on the sanitary condition of the British soldier in India, and I shall take an early opportunity of recurring to them.

With regard to the extreme fatality of Typhoid Fever, especially among young soldiers, the results of Dr. Bryden's investigations are altogether opposed to the generally accepted doctrine that this disease is necessarily, or even commonly, derived from the discharges of a previous case. That some general influence is at work which tends to develope Typhoid in India, especially in young soldiers, is clearly shown, but that this general influence is at the same time capable of being to a great extent disarmed by sanitary improvements can admit of little doubt. Dr. Bryden discusses the question from a purely epidemiological point of view, but he would at once admit that it is as important as ever to remedy those local conditions which are favorable to the production of this disease.

J. M. CUNINGHAM, M.D.,

Sanitary Commissioner with the Government of India.

TABLE OF CONTENTS.

SECTION I.

EUROPEAN TROOPS.

PARA.		PAGE.
1	The annual tables now embrace the statistics of the whole European Army of India	1
2	Great increase of labor consequently devolving on Dr. Bryden	1
3	Delay incidental to the commencement of the new system	1
4	Division of the army into groups...	2
5	Difficulty of grouping	2
6	General statistics of the three Presidencies. Death-rate in each from 1858 to 1871	3
7	Ratio of admissions into hospital in each Presidency from 1858 to 1871	3
8	Ratio of daily sick in each Presidency from 1858 to 1871	4
9	Ratio of invaliding in each Presidency from 1858 to 1871	5
10	Comparison of the general statistics of 1871 in the three Presidencies	5
11	Ratio of daily sick in the three Presidencies in 1871 compared	6
12	Ratio of admissions into hospital in the three Presidencies in 1871 compared	6
13	Ratio of mortality in the three Presidencies in 1871 compared	6
14	Details in different groups in 1871 compared ...	7
15	This report will be devoted mainly, as in former years, to the sanitary condition of the troops in Bengal	7
16	Sickness in 1871 comparatively small	7
17	Approximate number of men always in hospital from chief diseases ...	7
18	Death-rate in Bengal lower than it ever was before	8
19	Particulars of the deaths out of hospital	8
20	Results in each group, Bengal Proper	8
21	Gangetic Provinces and Oudh	8
22	Meerut and Rohilcund	9
23	Agra and Central India	9
24	The Punjab	9
25	Hill Stations	10
26	Convalescent Depôts ...	10
27	Groups in the Madras and Bombay Presidencies	10
28	Meteorology of India in 1871; information very imperfect	10
29	Meteorology of Bengal Proper in 1871	10
30	Meteorology of the North-Western Provinces in 1871	19
31	Meteorology of the Central Provinces in 1871	21
32	Meteorology of Oudh in 1871	21
33	Meteorology of the Punjab in 1871	22
34	History of the chief diseases in 1871. Cholera remarkably few cases	24
35	Cholera among the women and children	25
36	Cholera among Native Troops	25
37	Cholera among the prisoners	25
38	Statistics of cholera among the general population of India	25
39	General distribution of cholera over India shown in the map	26
40	Cholera among the general population in Bengal Proper ...	26
41	Cholera in Calcutta, less prevalent than in any former year, showed the same general rise and fall as in neighbouring districts	27
42	Outbreak in Her Majesty's 96th Regiment at Dinapore in November	28
43	Simultaneous outbreak in the Patna Jail	28

Para.		Page.
44	Cholera in Oudh	28
45	Outbreak in Lucknow City in November and December	29
46	Outbreak in garrison of Lucknow	29
47	Cholera in the North-Western Provinces	29
48	Cholera in the Central Provinces	31
49	Cholera in Berar	31
50	Cholera in Rajpootana and Ajmere	32
51	Cholera in the Bombay Presidency	32
52	Cholera in the Madras Presidency	33
53	Outbreak at Secunderabad	33
54	Cholera in the Punjab	35
55	The outbreak at Delhi in November	36
56	Importance of studying all the facts in regard to epidemics of cholera	36
57	The cholera of 1871 in relation to the anticipations of June	36
58	Importance of studying all the facts not only in India, but all over the world	37
59	Small-pox almost extinct among the troops	37
60	And singularly dormant among the general population	37
61	Fevers were much less prevalent than in 1870	38
62	Fevers among the general population	39
63	Enteric Fever. Importance only recently recognized	40
64	Enteric Fever in 1871 fatal at many stations	40
65	Almost entirely confined to young soldiers	40
66	Evidence that the disease was true typhoid	40
67	Apoplexy neither prevalent nor fatal	41
68	Dysentery and diarrhœa much below the average	41
69	Delirium Tremens less prevalent than usual	42
70	Hepatitis gives a favorable return	42
71	Venereal disease shows much the same ratio of admissions as in 1870	42
72	Comparison with Home Stations under the Act	42
73	High ratios of cases at certain stations	43
74	Comparison of results in 1871 and 1870	43
75	Much of the disease due to places other than the stations indicated in the returns	43
76	Venereal disease in the Madras and Bombay Presidencies in 1871	44
77	Venereal disease as a cause of inefficiency in the army	44
78	The rules are sufficient if properly administered, and have produced excellent results in some stations	44
79	Deaths according to age	44
80	Composition of the army according to age	45
81	Misapprehension as to the facts regarding the relation of age to the losses of the army in India	45
82	Number of married and unmarried soldiers in the three Presidencies	45
83	Comparative sickness and mortality among the married and unmarried for the five years 1867—71	46
84	Dr. Bryden's memorandum on these five years' statistics	49
85	Returns showing the extent of intemperate habits	52
86	Principles on which the invaliding for 1871 has been calculated	53
87	Extent of invaliding in Bengal in 1871 compared with previous years	53
88	Invaliding in Madras and Bombay for 1871	53
89	Causes of invaliding	54
90	Total loss by death and invaliding in the three Presidencies	54
91	Invaliding of 1871 compared with that of each year since 1860 in the three Presidencies	54
92	Measures have been taken for obtaining information regarding the final disposal of men invalided from India	55
93	Sickness and mortality in different stations	55
94	Sickness and mortality in different regiments	56
95	Average number of days spent in hospital by each man of different regiments	56
96	Strength of troops and families in the hills in 1871	56
97	Admissions into hospital at each station of the Madras Presidency by months, 1860—69	56
98	Admissions into hospital at each station of the Madras Presidency from the chief causes, 1860—69	58
99	Admissions into hospital in Bombay, 1861—69, by months	59
100	Admissions into hospital in Bombay, 1863—69, according to diseases	60
101	Comparison of sickness in the three Presidencies as shown in the foregoing statements	60
102	Statistics of women and children in the army of India	60
103	Death-rate among women in Bengal in 1871 favorable when compared with previous years	61
104	Mortality among women in Madras in 1871 compared with that of previous years	62

Para.		Page.
105	Mortality among women in Bombay in 1871 compared with that of previous years	62
106	Chief forms of sickness and causes of death among the women in 1871	63
107	Statistics of sickness and mortality among the children in 1871	63
108	Mortality among children in Bengal in 1871 compared with that of previous years	63
109	Mortality among children in Madras in 1871 compared with that of previous years	64
110	Mortality among children in Bombay in 1871 compared with that of previous years	64
111	Causes and distribution of mortality among children in 1871	65
112	Deaths of children according to age	65
113	Mortality among officers in 1871	66
114	Results of mortuary registration in cantonments	69
115	Cantonment registration still unsatisfactory	71
116	Cholera Enquiry. Registers of cases	71
117	Special local enquiry into cholera in the Central Provinces	71
118	Relation of sub-soil moisture to cholera. Dr. D. Cunningham's observations	73
119	Special investigation into cholera by Drs. Lewis and Cunningham continued in Calcutta	76
120	Special points treated of in their report	77
121	Other matters under investigation	77
122	New form of Cholera Map for Provincial Sanitary Reports	77
123	Discussion regarding cholera in Southern India	77
124	Modifications in cottage barrack for the hills	78
125	Minor alterations in other matters connected with accommodation for the troops	78
126	Comparative temperature in old and new barracks	79
127	Proposed substitution of thermantidotes for tatties	79
128	New scale of soldiers' bedding	79
129	Proposal to use aloe fibre for stuffing mattrasses abandoned	79
130	Rations with few exceptions good	79
131	Dr. Lewis' Report on cyst-infected meat	80
132	Dr. Lewis' Report on chylous urine	80
133	New scale of diet for military prisoners	80
134	Information regarding insanes	81
135	Eighth Report on water analyses	81
136	Further analyses for the present stopped	82
137	Improvements in water-supply	82
138	Provision of pumps and filter-beds for wells	82
139	Filters for barracks	83
140	Trench system of conservancy	83
141	Cultivation of cantonment lands	83
142	Feeding milch cattle on stable litter	83
143	Disinfectants	84
144	Re-distribution of the army	84
145	Sanitary requirements of stations	84

SECTION II.

NATIVE TROOPS.

Para.		Page.
146	Components of the Native Army of Bengal	85
147	General arrangement of the statistics	85
148	Total mortality during the year. Regular Native Army. Central India Irregular Force. Punjab Irregular Force. Madras Regiments serving in Bengal	85 & 86
149	Death-rate among men with their regiments. Regular Native Army. In different groups. Central India Irregular Force. Punjab Irregular Force. Madras Regiments serving in Bengal	86
150	The diseases to which the mortality was chiefly due	86
151	Death-rate at individual stations, 1st group, 2nd group, 3rd group, 4th group, and 5th group	86 & 87
152	Mortality in individual regiments, 1st group, 2nd group, 3rd group, 4th group, and 5th group. Punjab Irregular Force	87 & 88
153	Sickness of the year	88
154	Remarks on the chief diseases, cholera	88
155	Fevers	88
156	Respiratory diseases	88
157	Sanitary Reports from cantonments prescribed	89
158	Cantonment Sanitary Reports for 1871	90
159	New standard plan of hospital for Native Troops	90

SECTION III.

JAILS.

PARA. PAGE.
160 The health of the prisoners as a whole compares very favorably with that of previous years ... 91
161 Distribution of the sickness ... 91
162 Diseases chiefly prevailing ... 91
163 Distribution and chief causes of mortality ... 92
164 Sickness and mortality in individual jails, 1st group ... 92
165 Sickness and mortality in individual jails, 2nd group ... 94
166 Sickness and mortality in individual jails, 3rd group ... 95
167 Sickness and mortality in individual jails, 4th group ... 95
168 Sickness and mortality in individual jails, 5th group ... 95
169 Sickness and mortality in individual jails, 6th group ... 96
170 General improvement in the health of the prisoners of late years ... 97
171 Comparison of the results in different Provinces ... 98
172 Diminution of mortality from bowel complaints ... 100

SECTION IV.

GENERAL POPULATION.

173 Reports from the Provinces still incomplete ... 101
174 Vital statistics partially given already ... 101
175 Deaths from bowel complaints ... 101
176 Deaths from injuries ... 103
177 Deaths from different forms of injuries ... 104
178 Deaths from all other causes ... 105
179 Deaths from all causes ... 106
180 Mortality from different causes compared ... 107
181 No analysis of the statistics will be attempted till the results of the late census are known ... 108
182 Statistics of Bengal specially incorrect ... 108
183 Alteration of the primary form for registering deaths ... 108
184 Food supply of the people ... 108
185 Personal Proceedings of the Sanitary Commissioners ... 109
186 Sanitary progress ... 109
187 The want of the Reports for Bengal and the Punjab ... 109
188 Reports of Local Sanitary Commissioners to be submitted by the 1st June ... 110
189 Defects in the Reports ... 110
190 Education of the people in sanitary affairs ... 110
191 Local Public Works Loan Act No. XXIV of 1871 ... 110
192 Rules for regulating the conveyance by rail of persons suffering from infectious diseases ... 111
193 Contagious Diseases Act in Calcutta, Madras, and Bombay ... 111
194 The epidemic of "Dengue" ... 112
195 Tour in the Madras and Bombay Presidencies ... 112

APPENDIX A.

GENERAL REVIEW OF THE ANNUAL REPORTS OF THE LOCAL SANITARY COMMISSIONERS FOR 1870. 113—128

APPENDIX B.

A REPORT ON THE BLADDER-WORMS FOUND IN BEEF AND PORK. 129—140

APPENDIX C.

MICROSCOPICAL AND PHYSIOLOGICAL RESEARCHES INTO THE NATURE OF THE AGENTS PRODUCING CHOLERA. 141—203

The Table of Contents is prefixed to the Report.

PAGE.

APPENDIX D.

REPORT ON THE INFLUENCE OF AGE AND LENGTH OF SERVICE AS AFFECTING THE MORTALITY AND INVALIDING OF THE EUROPEAN ARMY IN 1871. 205—240

The Table of Contents is prefixed to the Report.

APPENDIX E.

ON A HÆMATOZOON INHABITING HUMAN BLOOD: ITS RELATION TO CHYLURIA AND OTHER DISEASES. 241—260

ANNUAL RETURNS OF THE EUROPEAN AND NATIVE ARMIES AND OF THE JAIL POPULATION OF THE BENGAL PRESIDENCY FOR THE YEAR 1871.

The Table of Contents is prefixed to the Returns.

ANNUAL SANITARY REPORT FOR 1871.

SECTION I.

EUROPEAN TROOPS.

The annual tables now embrace the statistics of the whole European army of India.

In last Annual Report I mentioned that it had been determined to concentrate the statistics of European soldiers in India, to show the details of sickness, mortality, and invaliding among the troops in the Madras and Bombay Presidencies on the same system which has now, for some years, been followed in Bengal, and to bring the results as they annually affect the whole European army of the country into one general view. This arrangement has, for the first time, been adopted for the year 1871, and I am now able to submit, for the information of the Government, the very full and complete Statements of disease, death, and invaliding among British soldiers, their wives and children in India, both taken as a whole and for each Presidency separately, which will be found in the Appendix. The importance of having such records is so self-evident that it need not again be insisted on. The collection of accurate data, prepared on a uniform plan, must always be the first step towards the proper study of disease, and the comprehensive view of the facts of each year, such as has been given for 1871, will, I have no doubt, lend very valuable assistance in the settlement of those great practical questions connected with the health of the European army in India which are of so much importance.

Great increase of labor consequently devolving on Dr. Bryden.

2. The preparation of these statistics, as may be seen at a glance, has been a work of very great labor, and I cannot speak too highly of the ability and indefatigable industry which Dr. Bryden has brought to bear upon it. Without these qualifications, indeed, the task could never have been accomplished. The compilation of the vital statistics of the European troops in this Presidency, with those of the Native troops and prisoners over the same area, was no small undertaking; and to these have now been added similar details for the European armies of Madras and Bombay, all of which have been arranged and tabulated without any increase of establishment. The labor, however, is more than any one man is able to continue, and I have already addressed the Government in a separate communication on the importance of strengthening the Statistical Branch of this Office, and of placing it on a more satisfactory basis.

Delay incidental to the commencement of the new system.

3. In connection with this extension of the statistics so as to embrace the European troops in Madras and Bombay, it is also to be remarked that much time has been lost. To a great extent this was unavoidable. The larger area from which Returns have to be collected, and the greater number of Officers concerned in their preparation and submission, necessarily increased the chances of delay. The means of communication with remote parts of the country, moreover, are slow, and the receipt of the Returns through the regular official channel has involved a very circuitous mode of procedure. Notwithstanding these difficulties, the Returns of European troops were, as a whole, received with punctuality, especially considering that this was the first year in which the new system has been in force. Indeed, had it not been necessary, for reasons which will be stated in a subsequent paragraph, to return all the invaliding rolls for alteration, the statistics of European troops in all three Presidencies might have been completed and submitted to the Government many weeks ago. With the experience of the past, it will, I trust, be possible in future years to avoid such causes of delay.

Division of the army into groups.

4. In order to embrace the larger area now included in the statistics of European troops, the map has been extended, so as to show the whole of India, and the country has been divided into sections, so as to correspond with the groups of stations which have been adopted in the Annual Tables. The divisions for Bengal are the same as those of last year. Considerable difficulty has been experienced in determining the divisions to be followed in Madras and Bombay, chiefly because of the vast area over which the small European force in these Presidencies is scattered. To show more fully the plan which has, after much consideration, been adopted, I shall here repeat what was said of the Bengal Divisions in last year's Report, and add some particulars regarding those which have now been arranged for Madras and Bombay.

No. I is Bengal Proper, great part of which is colored as the endemic area of cholera. In this division the force of European troops is very small, and great portion of this tract of country, especially that extending to the north and north-east, is represented only by Native troops and prisoners.

No. II embraces the large tract lying on either side of the valley of the Ganges, and is known by the names of some of the chief military cantonments which it contains—Dinapore, Benares, Cawnpore, with the stations of the Province of Oudh.

No. III includes generally the Meerut and Rohilcund Divisions,—an area which is bounded on the east by a line running close to the 80° of longitude, and by another line which bends round on the west and south very much after the course of the river Jumna.

No. IV, the Agra and Central India Group, is represented by the troops at Agra, Gwalior, Jhansie, Nowgong, Saugor, and Jubbulpore.

No. V is the Punjab, all the stations of the Province which are occupied by European soldiers being included in it, with the exception of Delhi, which it has been found more convenient to class with those of Meerut and Rohilcund.

No. VI represents Rajpootana, Malwa, and Scinde, and to the stations within this area has been added Aden, as the most suitable arrangement which could, under the circumstances, be adopted.

No. VII embraces great part of the Central Provinces, the Deccan, and Bombay,—a vast tract of country in which European troops are very sparsely quartered.

No. VIII includes Madras and Southern India generally, while

No. IX is British Burmah, four stations of which are represented in the statistics of British troops.

In addition to these, it may be remarked that there are two other groups in the Bengal Presidency, one including hill stations and the other convalescent depôts; but as these are divisions which cannot be shown geographically, they are not indicated on the map.

Difficulty of grouping.

5. In framing these groups, the object has been, on the one hand, to take together those parts of the country which may fairly be classed with one another in consideration of their climatology and natural features, and, on the other, to secure, as a basis of observation, a body of men sufficiently large for the purpose. In consequence of the imperative necessity of observing the last of these conditions, it is not always possible to secure the first of them. The divisions are by no means perfect, but they seem to be the best that can be devised. The strength of the garrisons in them varies considerably from over 11,000 in the Punjab and 7,783 in the Central Provinces and Deccan to only 1,975 in Bengal Proper and 1,819 in British Burmah. The map is on the same scale as that which has now for some years been employed to illustrate the Annual Sanitary Reports, but, in addition to embracing the whole of India, it has been improved so as to give a more accurate idea of the physical characters of the country. The mountain ranges and rivers are well shown, and the elevations of the principal places have also been entered,—information which will prove useful to all who wish to study either the general distribution of disease or the sanitary history of individual stations.

General statistics of the three Presidencies. Death-rate in each from 1858 to 1871.

6. Before entering upon the detailed discussion of the results of 1871, it may be observed that the experience of the year has, on the whole, been favorable. In the case of Bengal, this remark is peculiarly apt, for here in no year of which there is any accurate record has the mortality been so low. The death-rates in this Presidency for each year since 1858 are shown in the annexed Statement, and the ratios for Madras and Bombay have also been included, so far as I have been able to obtain the required information.

Statement showing the mortality among European Troops in the three Presidencies during 1871, *compared with that of each year since* 1858.

YEARS.	BENGAL.*				MADRAS.†				BOMBAY. ‡			
	DIED PER 1,000 OF AVERAGE STRENGTH.											
	Cholera.	All other causes.		Total.	Cholera.	All other causes.		Total.	Cholera.	All other causes.		Total.
		In hospital.	Out of hospital.			In hospital.	Out of hospital.			In hospital.	Out of hospital.	
1858 ...	9·16	91·39	10·52	111·07	* *	...	...	...	* *	...	...	..
1859 ...	8·67	35·30	1·38	45·35	...	...	...	...	...	...	...	..
1860 ...	12·04	24·14	·59	36·77	...	19·1	2·04	21·14	...	...	...	31·70
1861 ...	23·73	21·06	1·14	45·93	...	14·5	1·8	16·3	...	..	...	21·72
1862 ...	9·61	17·44	1·06	28·11	...	17·09	1·7	18·16	...	...	...	21·60
1863 ...	4·09	18·85	1·18	24·12	...	16·5	3·01	19·51	...	...	...	16·14
1864 ...	2·55	17·39	1·16	21·10	...	16·5	3·6	20·1	...	14·4	1·5	15·9
1865 ...	3·12	20·40	·72	24·24	...	19·5	2·9	22·4	16·0	17·8	1·3	35·1
1866 ...	1·37	17·34	1·40	20·11	2·3	17·9	1·5	21·7	0·6	10·7	1·4	12·7
1867 ...	13·84	16·16	·95	30·95	0·36	15·34	2·3	18·0	5·0	12·4	1·9	19·3
1868 ...	1·81	16·94	1·36	20·11	0·5	15·8	3·0	19·3	0·8	12·1	1·0	13·9
1869 ...	16·46	24·98	1·45	42·89	2·2	18·8	2·3	23·3	5·2	13·7	2·5	21·4
1870 ...	·63	19·74	1·53	21·90	3·5	13·4	2·3	19·2	0·1	15·3	1·3	16·7
1871 ...	·71	16·07	1·05	17·83	3·32	15·40	1·38	20·10	.09	13·10	·83	14·02

---

* From Doctor Bryden's Tables.

† From 1860—70, Sanitary Commissioner for Madras, Report for 1870, page 2; for 1871, Dr. Bryden.

‡ From 1860—63, Army Medical Reports; 1864—70, Report of Sanitary Commissioner, Bombay, for 1870, page 12; for 1871, Dr. Bryden.

* * The proportion of the deaths due to Cholera in the Madras and Bombay Presidencies cannot be shown for the early years. The figures in these columns have been supplied by the Sanitary Commissioners.

The death-rate for Bengal in the past year, 17·83 per 1,000, although lower than it has ever been previously, is still above the ratio which has been attained in the other Presidencies and specially in Bombay. The marked fluctuations in the Bengal mortality, chiefly due to cholera, contrast, as a rule, with the comparatively steady proportion of deaths in both Madras and Bombay.

Ratio of admissions into hospital in each Presidency from 1858—1871.

7. For future reference, it will be well at the same time to record, in a convenient form the comparative statistics of sickness and invaliding in the three Presidencies during a series of years.

Statement showing the admissions into Hospital among European Troops in the three Presidencies during 1871, *compared with those of each year since* 1858.

YEARS.	ADMISSIONS PER 1,000 OF AVERAGE STRENGTH.		
	Bengal.*	Madras.†	Bombay.‡
1858	3,111	......	......
1859	2,228	......	......
1860	2,051	1,699	1,938
1861	2,045	1,361	1,766
1862	1,970	1,291	1,818
1863	1,838	1,232	1,591
1864	1,641	1,521	1,514
1865	1,605	1,426	1,520
1866	1,501	1,460	1,410
1867	1,412	1,358	1,408
1868	1,438	1,388	1,148
1869	1,729	1,258	1,543
1870	1,731	1,436	1,602
1871	1,507	1,193	1,517

* From Dr. Bryden's Table.

† From 1860—70, Report of Sanitary Commissioner, Madras, for 1870, page 2 ; for 1871, Dr. Bryden.

‡ From 1860—63, Army Medical Reports; 1864—70, Report of the Sanitary Commissioner for Bombay for 1870, page 12 ; for 1871, Dr. Bryden.

Ratio of daily sick in each Presidency from 1858–1871.

8. The average number daily sick in hospital in each year varied as follows :—In this Statement also the average strength of the European force in each of the three Presidencies is recorded.

Statement showing the proportion of Daily Sick among European Troops in the three Presidencies during 1871, *compared with that of each year since* 1858.

YEARS.	BENGAL.*		MADRAS.†		BOMBAY.‡	
	Average Strength.	Daily Sick per 1,000.	Average Strength.	Daily Sick per 1,000.	Average Strength.	Daily Sick per 1,000.
1858	43,771	112	...	81	...	...
1859	55,104	90	...	67	...	...
1860	48,901	83	10,696	63	11,388	...
1861	44,879	82	10,739	56	8,860	...
1862	42,980	76	12,531	62	11,870	...
1863	41,351	69	12,621	55	12,329	..
1864	40,385	62	12,993	65	12,173	59
1865	37,210	60	13,059	62	11,899	56
1866	35,013	58	11,378	69	12,077	59
1867	33,784	53	10,793	61	11,866	58
1868	31,560	52	10,158	62	9,820	49
1869	34,624	59	10,277	59	10,538	56
1870	33,373	63	11,035	62	10,468	58
1871	35,122	59	10,844	57	10,840	54

* Dr. Bryden's Tables.

† From 1858 to 1868, Report of Sanitary Commissioner for Madras for 1868, page 12; for 1869 and 1870, Reports of Sanitary Commissioner for Madras for those years; for 1871, Dr. Bryden.

‡ From 1864—1870, Report of the Sanitary Commissioner for Bombay for 1870, page 12; for 1871, Dr. Bryden.

For Madras and Bombay the strengths are taken from the Army Medical Department Reports for the years 1860—69, and include only Her Majesty's European Regiments. For 1870 the strengths in these Presidencies are taken from the Reports of the Sanitary Commissioners for that year.

Ratio of invaliding in each Presidency from 1858 to 1871.

9. The Returns of invaliding in Bengal during a series of years were compared in last year's Report, but it is desirable that they should be recorded side by side with similar information from the other Presidencies.

Statement showing the extent of Invaliding among the European Troops in Bengal, Madras, and Bombay during 1871, *as compared with each year since* 1858.

YEARS.	RATIO PER 1,000 OF AVERAGE STRENGTH.								
	BENGAL.*			MADRAS.†			BOMBAY.‡		
	For discharge.	For change.	Total.	For discharge.	For change.	Total.	For discharge.	For change.	Total.
1858	...	...	43·59	...	...	...	...	...	...
1859	...	...	24·80	...	...	...	...	...	...
1860	27·89	16·20	44·09	8·1	49·6	57·7	8·99	15·34	24·33
1861	12·95	15·14	28·09	13·3	22·2	35·5	12·10	16·49	28·59
1862	13·31	18·19	31·50	9·5	18·7	28·3	10·87	19·88	30·75
1863	14·51	20·46	34·97	11·5	28·5	40·09	14·28	18·25	32·53
1864	14·29	22·46	36·75	14·0	51·0	65·03	13·88	19·14	33·02
1865	17·18	29·69	46·87	4·9	33·9	38·9	14·80	16·57	31·37
1866	17·37	31·67	49·04	10·5	46·1	56·6	21·36	24·59	45·96
1867	15·78	31·50	47·28	10·5	44·1	54·6	17·36	26·63	43·99
1868	13·66	31·92	45·58	9·5	52·8	62·4	15·38	20·77	36·15
1869	15·09	38·89	53·98	8·2	47·4	55·7	9·68	15·28	24·96
1870	8·37	44·13	52·50	6·6	70·4	77·05	...	...	27·8
1871	13·65	33·88	47·53	11·71	33·38	45·09	10·43	19·83	30·26

---

* Dr. Bryden's Tables.

† From 1860 to 1870, from Inspector General of Hospitals, Her Majesty's British Forces, Madras; for 1871, Dr. Bryden.

‡ From 1860 to 1869, from Inspector General of Hospitals, Her Majesty's British Forces, Bombay; for 1870, Report of Sanitary Commissioner for Bombay; for 1871, Dr. Bryden.

Comparison of the general statistics of 1871 in the three Presidencies.

10. Having given the statistics of the past year in relation to those of previous years in all the three Presidencies, it is necessary to examine more particularly the history of 1871, and for this purpose the very complete tables in the Appendix afford ample opportunity.

Table No. I shows in one view the extent of the sickness and mortality among the entire British forces occupying the country, the prevalence of the chief diseases in each month, the extent to which each disease contributed to the death-rate, and the proportion in which the cases under each head proved fatal. Out of a strength of 56,806, the daily average sick numbered 3,291, equivalent to a ratio of 57·9 per 1,000, and the mortality was at the rate of 17·53. The admissions into hospital were in the proportion of 1,449·6. In Tables II, III, and IV similar details are given for the armies of Bengal, Madras, and Bombay, and the general results may thus be compared.

1871.		PER 1,000 OF AVERAGE STRENGTH.		
	Strength.	Admissions.	Daily Sick.	Deaths.
Bengal	35,122	1507·7	59·2	17·83
Madras	10,844	1193·2	57·5	20·10
Bombay	10,840	1517·6	54·6	14·02
Army of India	56,806	1449·6	57·9	17·53

Tried by each of the tests here given, the Presidencies yield very different results. Bombay gives the largest number of cases of sickness; Madras the fewest. The constant sick-rate, on the other hand, was lowest in Bombay and highest in Bengal. The maximum death-rate was attained in Madras, and the minimum in Bombay.

Ratio of daily sick in the three Presidencies in 1871 compared.

11. In Table V, the constant sick-rate during each month of the year, the proportion of admissions and of deaths due to the chief diseases, and the ratio of fatal cases under the principal heads, are shown very clearly for each Presidency and for the army generally. The ratio of daily sick does not vary in different months so much as might have been anticipated. In Bengal it ranged between a minimum of 50 in December, and a maximum of 69 in August and September. In Madras the lowest ratio, 53, was in March, and the highest, 63, in July. In Bombay, from which the Returns under this head are the most favorable, the largest proportion of sick in any one month was 63 in July, and in December it fell to 44, lower than it was for any month in either of the other Presidencies.

Ratio of admissions into hospital in the three Presidencies in 1871 compared.

12. The second division of Table V, regarding the comparative proportion of admissions into hospital in the three Presidencies, and the causes to which they were due, is of much interest. In all of them the admissions from fevers—intermittent, remittent, and continued—when taken together, contribute most largely to the general result, and in all of them venereal diseases come next to fevers, but the details vary considerably. The comparative freedom from these fevers enjoyed by the troops in Madras is worthy of notice. There they equalled only 167 per 1,000; whereas in Bombay the ratio was 691, and in Bengal it was 590. In the matter of venereal affections, the Returns of this Presidency are the most unfavorable, for the ratio of cases has been 208 compared with 180 in Madras and only 174 in Bombay. Although the number of cases of enteric fever in none of the Presidencies is large, the fact that the disease has not been confined to any one part of the country, still less to any individual station, is important, but to this point reference will be made at greater length hereafter. The comparative prevalence of Delirium Tremens in Madras and also, though to a less extent, in Bombay as compared with Bengal, the large proportion of cases of Dysentery in Madras, and the preponderance of Respiratory diseases in Bengal, are all points which deserve attention. But here, as well as in the case of the other tables, I cannot attempt to do more than notice the chief features of importance which they present, and indicate very generally the nature of the details which they contain, and which well deserve careful study.

Ratio of mortality in the three Presidencies in 1871 compared.

13. A similar comparison of the death-rates caused by the principal diseases, as arranged in the third division of this same Table V, shows that in Bengal the highest ratio, 2·73, was due to Hepatitis; the next 2·25 to Remittent and Continued Fevers. Besides these, no one cause is specially prominent. In Madras also Hepatitis heads the list with a high ratio, 3·59; next, owing to the outbreak at Secunderabad, comes Cholera with a death-rate of 3·32. The mortality from Dysentery, 2·31, is

also heavy. In Bombay the Returns are singularly favorable. The death-rate for the Presidency, 14·02, is lower than in either Madras or Bengal, and the details of which it is composed show no special loss from any particular disease. Enteric fever, which, it may be observed, contributes much the same death-rate in each of the three armies, Apoplexy, Hepatitis, Heart disease and Phthisis, all caused deaths which exceeded one, and were under two per 1,000. The mortality from Cholera in Bombay, 0·09, is almost inappreciable, and falls considerably below even the ratio for Bengal, which in 1871 was exceptionally favorable.

Details in different groups in 1871 compared.

14. In Tables VI to XVII particulars, in the same form as that adopted for the army as a whole and for each Presidency, are given regarding the European forces occupying the nine different areas into which the country has been divided. In addition to these, there are the hill stations and convalescent depôts of Bengal which form two additional groups, and a third is composed of the hill stations and convalescent depôts of the other Presidencies which have been thrown together as one. Omitting the convalescent depôts in Bengal, and the similar group for Madras and Bombay, the general results in each of the divisions are tabulated side by side in Tables XVIII and XIX. Regarding these details in this Presidency, I shall have to remark presently. Tested by the number of admissions into hospital per 1,000 of average strength, Southern India shows most favorably, for here the ratio was only 1,079, and next the hill stations of Bengal 1,114. Owing to the prevalence of Fevers, the highest admission-rate was reached in the Central India group, where it amounted to 1,928 per 1,000; but the sixth group and also the Meerut and the Rohilcund stations, which usually form a very healthy group, yield a ratio which falls not far short of this figure. Similar comparison may be made in the constant sick-rates. As regards mortality, the ratio of 9·04 in the hill stations of Bengal is by far the most favorable, the return of only 11·54 from Burmah being vitiated, as explained in a Note to Table XVI by the fact that sick men belonging to regiments in this Province are frequently sent for change to Poonamallee depôt in the neighbourhood of Madras, and so relieve this division of a considerable proportion of the deaths which are properly to be ascribed to it.

This Report will be devoted mainly, as in former years, to the sanitary condition of the troops in Bengal.

15. Having given the general statistics of sickness and mortality in the three Presidencies for a series of years, and also those for 1871, I shall now confine myself more particularly to the sanitary history of European troops in Bengal for the past year, referring to the results in Madras and Bombay only in so far as they illustrate any matters of special importance, and leaving the details of these armies to be discussed, as formerly, by their own Sanitary Commissioners. In carrying out this design, I shall, for the sake of convenient reference hereafter, adhere, as far as possible, to the general plan which was followed in the last Sanitary Report.

Sickness in 1871 comparatively small.

16. As may be seen in the Table already given in paragraph 7, the ratio of admissions into hospital throughout the Bengal Presidency in 1871, although slightly higher than it was in 1866-67 and 1868, is lower than that of any one of the other 13 years with which comparison can be made. A reference to Table XVIII details how far this result was due to each of the different groups. Hill stations contribute only 1,114, while in Agra and Central India the proportion was as high as 1,928. It is to be remarked, however, that the Returns for all these groups are very favorable compared with those of previous years, and so far as this Presidency is concerned, it may be affirmed that 1871 was a year in which unhealthy influences were very markedly in abeyance. This statement, moreover, is confirmed by a comparison of the constant sick-rate as shown in the Statement included in paragraph 8, from which it will be seen that the ratio of daily sick per 1,000 of strength in 1871 is lower, and in many instances greatly lower, than what it has been in previous years. In both these respects the admissions into hospital and the daily number on an average always under treatment, 1871 compares very favorably with 1870.

Approximate number of men always in hospital from chief diseases.

17. Taking the number of men remaining in hospital at the close of each month as shown in the monthly Returns of sick and wounded, an approximate estimate may be formed of the number who were on an average daily inefficient from

the chief diseases. Arranged in the order in which they have contributed to the total, they stand as follows:—

Statement showing approximately the number of European Soldiers of the Bengal Presidency daily in hospital from the chief diseases during 1871.

Fevers ...	... 460	Wounds	... 34
Venereal disease	... 458	Ophthalmia	... 26
Diseases of Liver	... 124	Cholera	... 1
Diseases of Chest	... 121	Small-pox	... 5
Diarrhœa...	... 59	Apoplexy	... 3
Dysentery	... 56	Other diseases	... 646

Death-rate in Bengal lower than it ever was before.

18. The particulars regarding the forms of sickness and the order of their prevalence, as has been already mentioned, are shown very clearly in Table V, not only for Bengal, but for all the Presidencies; and similar details are also given in the same place regarding the proportion of mortality which has been due to individual diseases. It is not necessary, therefore, to enter into these questions again, or to repeat the information which can easily be gained in this table. Suffice it to say for this Presidency in 1871 that, in regard to sickness, the ratios both of admissions and of daily sick compare favorably with those of previous years, and that the mortality was lower than it has ever been before. As we shall see hereafter, this result has been mainly due to the comparative absence of any epidemic, and to the singular immunity from Cholera, which characterized 1870, and which was also continued, with few exceptions to which special reference will be made in a subsequent paragraph, throughout 1871.

Particulars of the deaths out of hospital.

19. Table XXVII contains a detailed statement not only of the diseases to which the deaths have been due in the three Presidencies, but also of the deaths which occurred out of hospital and their causes. The 96 returned under this latter head may be thus classed; 9 were due to sudden disease, 47 to accident, 36 to suicide, 1 man was murdered, 2 were executed, and in one case the cause of death had not been ascertained. The deaths out of hospital throughout the army generally equalled 1·07 per 1,000; in Bengal 1·05, in Madras 1·38, and in Bombay ·83. The suicidal deaths give a ratio of ·62 for the whole army; ·57 for Bengal, ·83 for Madras, and ·55 for Bombay.

Results in each group, Bengal Proper.

20. The results vary considerably not only in the different groups, but also in the individual stations of which each group is composed. In Bengal Proper, which is represented by only 1,975 men forming the garrisons of Fort William, Dum-Dum, and Barrackpore, the admission-rate, 1,291, and the daily sick-rate, 50·1, were below the averages of the Presidency as a whole; but the death-rate, 18·72, was in excess of the ratio for the army generally. During the ten years 1860—69, the annual admissions have equalled 1,821, the daily sick 69, and the deaths 29·57 per 1,000. In Fort William during 1871, as may be seen in Table XX, although the sickness was considerable, the mortality equalled only 10 per 1,000. In Dum-Dum also the return is favorable, the death-rate in hospital from ordinary causes having been only 14·88, but a few cases of Cholera and of deaths out of hospital raised the loss to 19·35. In Barrackpore, although no death was due to Cholera, the ratio stands at 31·75. Of this 3·97 was due to deaths out of hospital, but the chief cause was Hepatitis; 8 out of the total of 16 deaths which occurred, or exactly one-half, having been occasioned by this disease. The ratios in which the chief diseases contributed both to admissions into hospital and also to the mortality at each station are detailed in Tables XXI and XXII.

Gangetic Provinces and Oudh.

21. In the second group, during the 10-year period 1860—69 the admissions into hospital averaged 1,614, the daily sick 69, and the deaths 28·59 per 1,000. In 1870, as shown in last Annual Report, the results were more favorable, the ratios under these three heads having been 1,354, 61, and 22·97. In 1871 the results have been still more satisfactory, for the cases of sickness have equalled only 1,276, the number constantly sick 62, and the mortality 18·34 per 1,000. Cholera, Hepatitis, and Enteric fever were the chief forms of fatal sickness. The admissions into

hospital at individual stations varied from 2,178 per 1,000 at Cawnpore to 809 at Seetapore; the daily sick, which was 107 per 1,000 at Cawnpore, was only 34 at Seetapore. For these very unfavorable results at Cawnpore venereal disease, as will be more particularly mentioned in a subsequent paragraph, was to a large extent responsible. As regards deaths, Cawnpore shows well, for the mortality at this station equalled only 13·14. Fyzabad and Seetapore both give a slightly smaller ratio, but in other stations comprised in this group, the loss was much heavier especially at Dinapore, Benares, and Allahabad, in which it amounted respectively to 26·11, 27·24, and 26·35 per 1,000.

Meerut and Rohilcund.

22. The experience of the 10 years 1860—69 in the third group gives an average admission-rate of 1,576, an average sick-rate of 72, and an average death-rate of 26·61. In 1870 these ratios were 1,284, 69, and 18·65. In 1871 they have been 1,659, 65, and 16·53 per 1,000. Among the seven stations comprising this group, very marked differences appear in the statistics both of sickness and death. The admissions fluctuate between a maximum of 2,178 at Shajehanpore and a minimum of 794 at the adjoining station of Bareilly. The constant sick-rate, which was 76 at Shajehanpore and Meerut, was only 45 at Muttra; while the deaths, which equalled 22·51 at Meerut and 19·14 at Delhi, amounted to only 8·17 at Roorkee, and 5·52 at Moradabad. Hepatitis, Enteric fever, Heart disease, and Dysentery account for 37 out of the 70 deaths.

Agra and Central India.

23. In the fourth group, which comprises the stations occupied by European troops in Central India, the sickness and mortality were both in excess of what they were throughout the Bengal Presidency as a whole. The admissions were 1,928 per 1,000, the daily sick-rate 64, and the deaths 18·45; but although these results are unfavorable compared with those of other groups in 1871, they contrast well with the general experience of the 10-year period 1860—69, during which the cases of sickness over this area averaged 2,169, the constant sick-rate 74, and the deaths 38·48 per 1,000. In 1870 in this group the admissions were 2,122, the daily sick 77, and the mortality 22·23 per 1,000. The results of 1871 are more satisfactory, and it may be remarked that, while the extent of sickness during the previous 11 years has on several occasions been slightly under what it was in the past year, in only two of them was the mortality in this group under what it has been in 1871, and in both the difference was trifling. Taking the seven stations concerned individually, sickness was most prevalent at Jhansie, where the admissions equalled 30·42 per 1,000, and the daily sick 76. But the latter ratio was 83 at Morar, although the admissions there, 23·60 per 1,000, fell considerably short of what they were at Jhansie. In the matter of sickness Jubbulpore and Gwalior give a much more favorable return; at both of them also the mortality was below the average of the group taken as a whole. At Agra and Nowgong the mortality was high, having reached 25·08 and 26·31 per 1,000. In this division again Hepatitis, Heart disease and Enteric fever contributed largely to the deaths, but the highest number is returned under the head of Remittent fever.

The Punjab.

24. In the Punjab the sickness represented by 1,594 admissions and a constant proportion of 54 men in hospital per 1,000 of average strength, as well as the death-rate 18·13, contrast favorably with the results of the year previous, in which, owing chiefly to the prevalence of Fever, as explained in last Annual Report, the admissions equalled 23·23, the daily sick 69, and the deaths 24·48 per 1,000. The 10-year period 1860—69 gives average ratios as follows:—admissions 1,740, daily sick 56, and deaths 25·24; but the statistics of individual years show very marked fluctuations. The admissions have varied from 2,102 in 1862 to 1,406 in 1867, the daily sick from 66 in 1862 to 43 in 1867, and the mortality from 14·20 in 1860 to 51·45 in 1861. In 1871 the 14 stations situated in this Punjab group also show very marked differences. Nowshera gives an admission-rate of 3,395; Mooltan only 1,019. At Ferozepore the daily sick equalled 38 per 1,000; at Nowshera it was 72. Excepting Dera Ishmail Khan and Fort Lahore, in both of which the force is very small, and affords insufficient basis for calculating results on one year, Nowshera heads the death-rate with a mortality of 29·85. Table XXI shows that at this station fevers were extremely prevalent.

Hill stations.

25. In the Sanitary Report for 1870 the very favorable results in the hill stations were well illustrated by an admission-rate of 1,042, a daily sick-rate of 40, and a mortality of 11·17 per 1,000. During 1871, although the sickness was somewhat greater, yielding ratios of 1,114 and 48, the death-rate has been more favorable than it was in the year previous, and has amounted to only 9·04. The averages of the 10-year period 1860—69 are for admissions 1,069, daily sick 49, and mortality 14·78 compared with 1,754, 67, and 29·98 for the army of this Presidency generally during the same time. For 1871, both Chuckrata and Dugshaie show a singularly small death-rate. In the first of these it was 6·45, and in the second of them only 5·45. Raneekhet, with an admission-rate of 1,816 a death of 24 per 1,000, does not show well. Venereal disease, Diarrhœa, and Rheumatism and diseases of the Respiratory organs were all very prevalent. When better housed, the results will, I have no doubt, greatly improve, for there is nothing in the climatic conditions of Raneekhet to account for so much sickness.

Convalescent depots.

26. The last group in the series of tables for this Presidency includes the different hill depôts to which sickly men are sent to escape the hot weather and rains in the plains. During the season from May to October the number averaged 2,275, the admissions were in the proportion of 1,061, the daily sick 93, and the deaths 12·75 per 1,000. These results are much more favorable than they were in 1870, when the ratios, calculated on the same principle, were 1,365, 96, and 22·62. They are also more favorable than the average of the 10 years, 1860—69, in which the admissions stand at 1,271, and the deaths at 30·75 per 1,000. The depôts, it may be remarked, are seven in number, and are scattered over the Himalayan range from Darjeeling in the south-east to Murree in the north-west.

Groups in the Madras and Bombay Presidencies.

27. The particulars regarding the different groups into which the European armies in Madras and Bombay have been divided are given in Tables XIII to XVII, and Nos. XVIII and XIX show the general results for all of them compared side by side. In Nos. XX, XXI, and XXII again the details of sickness and mortality at each station of each group are very clearly shown; the distribution of sickness by months, the annual ratios of admissions and daily sick, as well as the proportions in which different forms of sickness prevailed and contributed to the mortality. These important matters may easily be studied in these tables, which indicate very plainly the results for each station and the stations which compose each group throughout the army of India.

Meteorology of India in 1871; information very imperfect.

28. Before discussing further the sanitary history of the European army in 1871, I shall briefly collate all the data which I can gather regarding the meteorology of the year. On this point, however, it must be confessed that information is still most imperfect and unsatisfactory. By the Meteorological Reporters in Bengal, the North-Western Provinces and the Punjab, and by the Sanitary Commissioner in the Central Provinces, certain facts have been communicated, but regarding even the commonest atmospheric phenomena in the Madras and Bombay Presidencies, and that great tract of country which is under the direct rule of native princes, the meteorological history of the year, so far at least as this Office is concerned, is almost a blank. In the Gazettes no doubt tabular Statements appear showing the temperature, rainfall, &c., at certain places in the minor Presidencies; but, so far as I am aware, these data have not been collated or arranged in such a way as to render them of any practical value. I have so frequently insisted on the great importance of considering the sanitary history of each year in immediate connection with its meteorological history, not only as regards individual provinces, but the whole continent of India, that I need not recur to the subject at greater length. Now that the statistics of European troops in all the Presidencies are brought into one general view, it is all the more desirable that there should be a full and complete record of the atmospheric conditions which are associated from year to year with any unusual prevalence or comparative absence of disease.

Meteorology of Bengal Proper in 1871.

29. Regarding the meteorology of Bengal Proper in 1871, the following information has been taken from Mr. Blanford's Report; and as he is the only one of the Reporters who has attempted the study of the atmospheric phenomena on a broad basis, I shall extract from it at considerable length.

Barometric Pressure.

Barometric monthly means for 1871, *reduced to sea-level.*

STATIONS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year
Madras	29·994	29·963	29·940	29·856	29·768	29·702	29·738	29·772	29·776	29·859	29·943	30·021	29·861
Vizagapatam	30·002	·946	·909	·830	·717	·595	·614	·688	·702	·839	·970	·040	·821
Akyab	29·972	·941	·919	·867	·767	·669	·693	·726	·772	·839	·964	·043	·848
False Point	30·052	·985	·932	·847	·742	·594	·619	·687	·737	·875	30·027	·112	·851
Cuttack	·016	·946	·889	·783	·702	·570	·600	·672	·705	·847	29·984	·063	·815
Saugor Island	·003	·931	·872	·800	·698	·540	·570	·622	·693	·820	·978	·063	·799
Chittagong	29·979	·933	·909	·845	·742	·617	·655	·691	·761	·840	·975	·061	·834
Calcutta	30·006	·927	·869	·790	·696	·541	·560	·622	·695	·824	·973	·065	·797
Jessore	29·986	·912	·856	·788	·695	·544	·571	·621	·698	·814	·959	·058	·792
Dacca	·996	·928	·871	·803	·710	·559	·586	·636	·713	·829	·975	·059	·805
Cachar	·982	·927	·882	·827	·716	·595	·637	·670	·746	·836	·968	·062	·821
Hazareebaugh	30·016	·919	·838	·705	·655	·497	·525	·606	·646	·825	·975	·070	·773
Berhampore	29·995	·912	·847	·760	·682	·523	·548	·607	·683	·812	·948	·058	·781
Gya	....	....	·820	....	....	·467	·522	·609	·657	·843	·953	·034	....
Dehree	30·053	·944	·850	·680	·637	·474	·482	·568	·606	·787	·965	·109	·763
Arrah	29·995	·913	·814	·705	·632	·443	·485	·573	·621	·804	·959	·091	·753
Patna	30·019	·940	·862	·759	·672	·491	·540	·614	·660	·829	·961	·062	·784
Monghyr	·003	·916	·856	·767	·691	·527	·549	·621	·682	·822	·969	·077	·790
Darjeeling	·047	·991	·932	·821	·735	·582	·588	·640	·747	·855	30·015	·114	·839
Goalparah	29·963	·899	·852	·786	·699	·549	·572	·626	·696	·802	29·943	·029	·785
Shillong	30·000	·933	·867	·799	....	·578	·596	·638	·733	·862	30·020	·130	....
Benares	·048	·956	·875	·772	·685	·523	·549	·630	·670	·854	·004	·096	·805
Roorkee	·060	·957	·875	·759	·662	·518	·530	·600	·691	·846	·009	·107	·801
Jubbulpore	·033	·969	·882	·765	·655	·494	·533	·624	·625	·889	·016	·044	·794
Nagpore	·071	·963	·871	·740	·701	·540	·594	·668	·673	·849	29·946	·022	·803

Comparison of barometric means of 1871, *with the averages of the five years* 1867—71.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Madras	—·001	—·008	+·014	+·021	+·021	+·004	+·005	+·011	—·006	+·004	—·010	+·015
Akyab	—·045	—·010	+·001	+·005	—·008	—·042	—·022	—·007	—·010	—·028	—·009	+·006
Cuttack	—·053	—·035	—·016	—·007	......	—·061	—·029	—·005	—·040	—·057	—·059	—·035
Saugor Island	—·024	—·017	—·013	+·010	+·012	—·023	—·017	+·026	+·021	—·013	—·004	+·016
Chittagong	—·024	—·012	+·027	+·026	+·007	—·008	+·025	+·026	+·034	—·008	+·002	+·033
Calcutta	—·034	—·037	—·019	—·003	+·010	—·030	......	—·007	—·003	—·035	—·028	+·004
Jessore	—·029	—·031	—·015	+·014	+·008	—·014	+·016	+·001	+·003	—·039	—·029	+·010
Dacca	—·020	—·035	—·009	—·007	—·002	—·035	+·009	+·015	+·007	—·030	—·022	+·012
Hazareebaugh	—·017	—·019	—·011	—·020	+·021	—·020	......	+·010	—·012	—·023	—·020	+·028
Berhampore	—·025	—·035	—·014	+·014	+·044	+·011	+·011	—·004	—·011	—·027	—·031	+·014
Patna	—·912	—·026	—·011	—·004	+·015	—·036	—·001	+·002	—·033	—·048	—·084	—·014
Monghyr	—·027	—·027	+·008	+·017	+·037	+·001	+·013	+·018	+·004	—·027	—·030	+·007
Darjeeling	+·014	+·022	+·013	+·003	+·023	+·001	+·006	+·011	+·011	—·006	—·021	+·017
Benares	—·045	—·046	—·039	—·019	+·036	—·010	+·014	+·020	—·010	—·018	—·033	—·002
Roorkee	—·028	—·035	—·040	—·025	+·016	—·008	—·007	+·003	—·005	—·034	—·039	—·009
Jubbulpore	+·014	—·025	—·010	+·001	+·006	—·042	—·017	—·006	—·030	+·043	+·010	0
Nagpore	+·058	+·019	+·034	+·028	+·069	—·003	+·029	+·021	+·004	+·021	—·038	—·017

Beginning with October, the month in which the south-west monsoon terminates, and is succeeded in Bengal by gentle land winds blowing from the Upper Provinces, the pressure is pretty uniform over Central, Northern, and Eastern India. In the following months it rises rapidly over the entire area, but most so on the elevated tract that lies to the south of the Ganges, and includes Chota Nágpúr, Bundelcund, and a part of Nágpúr. The station of Benares is also included in this tract. On the Gangetic plains to the north, on the flats of the Gangetic delta and of the Orissa coast lying east and south-east, and on the Malwa plateau to the west, the pressure appears to be, as a rule, sensibly lower; but the area of high pressure extends to the south-east, so as to include Cuttack, where the barometer in the cold weather months generally ranges above that of Calcutta and the delta stations. Another and in a great measure distinct area of high pressure appears in the Upper Panjáb, coinciding with the locus of lowest mean winter temperature, and the pressure declines gradually down the whole course of the Ganges Valley. In December the general pressure is at its annual maximum, and in January it is nearly as high.

It is probable that the fall of pressure with the approach of the hot weather is less rapid in the Panjáb than in the Central Provinces and Bengal. In March, April, and May the minimum pressure is about Nágpúr, and in the hill-country about Hazareebaugh it is lower than either on the delta and coast to the east and south-east, or in the Upper Provinces to west and north-west. In June the setting in of the south-west monsoon is accompanied by a general sudden fall of pressure; greater, however, in the Panjáb than in the Nágpúr region, so that the locus of minimum pressure is probably transferred to the former.* In June and July the pressure is nearly the same, and is the minimum of the year. During the continuance of rains the pressure rises but gradually; but in October the close of the monsoon is marked by a more rapid rise, and in such a measure that the pressure is nearly equalized over the whole region.

In 1871 the atmospheric pressure was generally below the average in the first three months of the year, except at Nágpúr and Darjeeling, and in March at Madras, Chittagong, and Monghyr. In April it remained lower than usual at Hazareebaugh, Benares, and Roorkee, while the relative excess was maintained at the stations above-mentioned, and was extended to Saugor Island, Jessore, and Berhampore. In May it was generally above the average, and most so at Berhampore, Monghyr, Nágpúr, and Benares. In June the pressure again fell below the average, except at Madras, Berhampore, Monghyr, and Darjeeling, and was especially low at Jabalpúr, Cuttack, Akyab, and Dacca. During the south-west monsoon the pressure remained lower than usual at the first three of the stations last mentioned; above the mean at Chittagong, Dacca, Jessore, Monghyr, Darjeeling, and Nágpúr; also during the earlier part at Berhampore, and the latter part at Saugor Island. In October the barometer was below the mean everywhere in Bengal and Behar, but above it at Nágpúr and Jabalpúr, and the depression lasted during November when Nágpúr also was affected. In December the pressure was generally above the average, Cuttack, Nágpúr, Jabalpúr, Patna, Benares, and Roorkee being the only exceptions.

MEAN MONTHLY TEMPERATURES OF 1871.

Reduced to Sea Level Values.

Temperature.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
CEYLON.												
Hambantotte ...	78·9	80·3	81·6	83·3	82·4	82·7	81·8	82·8	81·5	81·7	80·7	79·7
Galle ...	78·4	80·0	80·9	82·0	81·6	80·4	79·1	80·9	80·3	80·7	80·1	79·0
Colombo ...	79·7	81·0	81·2	83·4	83·6	81·1	80·0	81·5	81·6	81·9	81·4	80·8
Kandy ...	77·6	79·5	81·3	82·5	82·1	79·7	77·7	79·8	79·3	79·6	79·2	78·8
Trincomalee ...	...	80·4	82·8	86·1	86·9	86·9	86·0	86·3	84·4	83·6	80·4	80·0
Jaffna ...	78·9	81·1	83·5	86·3	85·5	84·1	83·0	83·8	83·4	83·3	81·1	79·9
SOUTH INDIA.												
Madras ...	77·4	79·7	83·2	85·6	88·6	88·1	85·9	87·7	85·1	82·0	77·8	78·7
Vizagapatam ...	76·0	79·4	83·9	86·2	87·8	87·4	85·3	86·5	85·7	86·1	82·3	79·0

---

* The registers of the Panjáb stations are, unfortunately, too ambiguous to afford evidence on this point, since it appears from Dr. Neil's reports that they are obtained partly from aneroid readings, partly from those of mercurial barometers, and while the latter have been compared only with a local standard, the error of which is unknown, and with readings uncorrected for temperature, the latter are also uncorrected for temperature, and the elevations of the barometers are not given.

MEAN MONTHLY TEMPERATURES OF 1871.

Reduced to Sea Level Values,—contd.

		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
EAST COAST.													
Port Blair	...	78·9	80·9	83·0	85·1	81·3	81·9	80·6	81·1	79·8	80·7	81·0	80·2
Akyab	...	71·5	75·4	79·1	84·0	83·7	80·8	80·3	81·0	81·6	81·9	77·4	72·3
BENGAL.													
Chittagong	...	68·3	73·5	77·0	81·6	82·0	80·8	80·7	81·0	81·7	80·3	74·0	68·4
Cachar	...	64·6	70·6	73·8	77·9	81·2	82·9	80·8	81·8	81·9	79·6	72·3	65·4
Nazeera	...	63·6	67·9	69·2	75·0	80·1	85·3	84·4	85·0	84·7	79·9	72·2	64·2
Shillong	...	65·6	69·5	73·8	78·5	...	83·2	82·6	82·9	81·4	77·2	70·2	64·2
Dacca	...	67·3	75·0	78·5	81·1	81·9	82·8	82·6	83·5	83·4	81·6	75·1	68·4
Goalparah	...	66·8	71·3	72·7	76·5	79·1	82·0	82·0	82·4	81·1	79·2	72·8	66·7
Darjeeling	...	63·6	66·0	68·1	75·8	78·7	83·3	83·0	83·1	81·1	78·3	69·3	63·8
Jessore	...	64·7	72·3	78·6	82·1	82·1	81·9	82·6	83·0	82·7	81·1	73·7	65·6
Berhampore*	...	66·1	73·7	78·2	84·5	82·7	83·4	83·4	84·3	83·3	82·5	75·0	67·2
Calcutta	...	68·0	74·6	79·7	83·0	83·8	82·8	82·6	83·0	82·5	81·8	76·1	69·4
Saugor Island	...	68·4	75·3	80·0	82·8	84·1	84·0	82·8	83·3	82·8	81·1	75·7	69·4
Cuttack	...	69·5	75·0	80·9	85·0	86·2	84·4	82·4	82·9	82·6	81·9	77·3	73·7
False Point	...	71·5	76·8	81·6	83·8	86·7	85·4	84·5	84·3	85·1	83·9	77·9	72·6
Hazareebaugh	...	67·2	74·1	81·3	88·9	87·8	85·5	82·7	82·2	82·4	80·6	75·0	68·0
Monghyr	...	63·5	70·7	76·8	84·5	83·9	85·5	83·6	83·4	82·3	81·4	72·9	64·7
Gya	...	...	...	81·0	88·7	86·7	88·0	83·7	83·5	83·7	81·9	74·7	66·3
Patna	...	62·0	69·1	77·1	85·9	85·4	88·7	84·4	84·6	82·7	81·7	72·5	64·5
NORTH-WESTERN PROVINCES.													
Benares	...	60·8	68·9	76·4	86·1	88·7	88·5	84·3	83·5	82·6	80·4	72·1	63·1
Roorkee	...	58·8	67·3	73·7	84·7	87·1	87·8	84·9	84·8	84·9	78·1	67·9	59·9
CENTRAL PROVINCES.													
Hoshungabad	...	68·9	77·6	84·1	91·9	96·2	86·7	81·5	80·9	82·3	82·4	79·8	76·9
Sagar	...	67·4	75·9	82·7	89·8	90·8	85·4	81·5	80·1	81·7	83·2	79·3	75·0
Jabalpúr	...	66·2	71·4	78·8	88·8	91·3	85·4	81·3	80·5	82·2	79·5	74·6	70·0
Pachmahri	...	69·8	75·1	79·8	90·1	91·1	82·0	79·3	77·9	79·7	78·6	75·3	71·5
Seoni	...	69·8	74·0	81·7	88·8	88·6	84·3	81·5	80·6	81·8	80·5	75·8	75·1
Nágpúr	...	70·8	77·0	84·3	92·2	92·7	85·8	80·9	80·3	82·1	81·7	77·9	74·3
Raipúr	...	69·3	...	...	91·4	92·9	85·3	80·7	82·2	81·9	81·5	77·2	74·1
Sambalpúr	...	...	...	...	90·4	93·7	81·3	80·7	83·2	83·6	83·1	77·2	72·2
Chanda	...	69·1	75·3	83·0	92·6	94·3	86·3	81·1	81·9	80·3	78·5	76·4	73·7

Comparison of the mean temperatures of each month of 1871 *with the averages of the years* 1868—71.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Port Blair	—0·1	+1·5	+1·3	+1·0	—0·6	·0	—0·3	+0·3	—0·3	+0·2	+0·9	+0·7
Madras	+0·6	+0·1	+0·2	—0·5	—1·0	+0·2	·0	+1·4	+0·8	—0·5	—0·9	+0·9
Akyab	+1·0	+0·8	+0·2	+0·4	—0·7	—1·5	—0·7	—0·6	—0·4	+0·4	—0·4	+0·3
Cuttack	—0·9	+0·4	+0·6	—1·2	—3·0	—1·6	—1·8	—1·3	—0·8	+0·2	+2·5	+3·9
False Point	+0·8	+1·6	+1·5	—0·2	—0·4	—0·8	—0·8	—0·8	—0·1	—0·2	+0·5	+1·7
Saugor Island	—0·6	+1·3	+0·1	—1·1	—1·5	—1·1	—1·3	—0·2	—0·3	—0·1	+0·7	+1·2
Calcutta	—0·8	+1·3	+0·1	—0·6	—1·2	—0·9	—0·5	—0·2	—0·1	+0·1	+1·0	+0·9
Chittagong	+0·5	+1·6	—1·1	+0·2	—1·2	—1·0	—0·4	—0·5	·0	—0·4	—0·4	+0·3
Jessore	—1·3	+1·5	—0·3	—0·2	—3·2	—1·6	—0·7	—0·2	—0·1	+0·5	+1·7	+0·9
Dacca	—0·2	+2·2	—1·3	—0·9	—1·7	—0·7	—0·6	—0·3	+0·2	·0	+0·2	—0·1
Hazareebaugh	—0·2	+2·2	+1·3	+0·6	—3·8	—1·6	—2·2	—1·4	—0·6	+0·4	+0·4	+0·7
Berhampore	+0·6	+2·8	—0·2	—1·2	—3·8	—1·4	—0·8	·0	—0·3	+0·6	+1·3	+0·8
Patna	+0·8	+2·4	·0	+1·7	—2·1	+1·0	—0·2	+0·7	—0·1	+2·3	+3·1	+2·2
Monghyr	+0·3	+1·8	—0·7	—0·6	—3·3	—1·1	—0·9	—0·8	—0·9	+0·6	+1·1	+0·8
Darjeeling	+0·8	+1·6	—2·2	—0·2	—1·4	+0·1	—0·8	—0·8	—0·9	+0·4	—0·8	—0·1
Benares	+1·6	+0·4	+0·5	—0·8	—3·2	—2·4	—2·3	—2·4	—2·1	+0·5	+2·9	+3·3
Roorkee	—1·3	+2·5	+1·6	+1·8	—4·2	—3·7	—2·1	—1·9	—0·6	—0·4	+1·7	—0·1
Nágpúr	—2·6	—1·0	+0·3	+2·0	—4·0	—3·1	—0·4	—1·5	+0·2	+1·3	+2·7	+2·7
Jabalpúr	—0·4	+0·5	+1·6	+0·9	—2·6	—5·7	—1·0	—1·1	—0·2	+0·8	+3·2	+3·6

The distribution of mean temperature (as deduced from four years' observations), and the annual changes that it undergoes, appear to correspond in general to the distribution and changes of mean pressure already described; areas of low temperature coinciding with those of high pressure, and *vice versâ*. Thus, in January, the Panjáb has a lower temperature than any other part of India, and the mean temperature of Benares, allowing for difference of elevation, is a little lower than that of Roorkee and Agra in the hot weather. On the other hand, the seat of highest temperature at this season is in Central India, and, during the rainy season, in the Panjáb. This coincidence is, however, not exact, nor without exception. For example, while the mean pressure at Cuttack during the cold weather months is higher than that of the Gangetic delta and equal to that of Roorkee and Agra, the mean temperature of the same station is two or three degrees higher than that of the former area; and, after allowing for difference of elevation, at least fifteen degrees higher than that of the latter. It has already been noticed by the Messrs. Von Schlagintweit that in the cold weather months the course of the isothermals coincides more nearly with the parallels of latitude than at any other season. This conclusion is borne out by the present table, but it shows the isothermals to be less regular than as they are laid down on Messrs. Schlagintweit's chart. The temperature corresponding to equal elevations is about the same (73·5°) in January at Nágpúr and Bombay, and the January isothermal of 67·5° would pass nearly through the stations of Dacca, Calcutta, and Hazareebaugh, somewhat south of Jabalpúr, and North of Hoshungabád. The isothermal of 60° is somewhat less regular. It passes from Seebsaugor west by north into Bhotan, and, after following the outer spurs of the Himalayas nearly to the limits of Behar, it descends across the plains to Benares, and follows the course of the Ganges to Agra; then, after a sudden bend to the north, it turns again to west and south, and takes a course about parallel to the Sutlej, and some distance to the south of that river.

The general rise of temperature in February and March is considerably greater in the interior of the Peninsula than on the coast, and greater on the east than on the west coast. Thus, in the Panjáb, it amounts to between 12° and 14°; at Ajmere and Jhansie to 15°; at Nágpúr and Hoshungabád to about 12°; while at False Point and Saugor Island it is 9° or 10°; and Bombay barely 4°. In the Gangetic delta it amounts to 12° or 13°, but at Cachar only to 10°; at Goalparah to 9°; and at Seebsaugor in Upper Assam to not more than 8°.

In April and May these variations in the relative rise of temperature become greatly exaggerated, and in the latter month the isothermals form a series of somewhat irregular concentric curves around a portion of the Central Provinces and Rájpútána, now the hottest portion of the Peninsula. The May isotherm of 95° includes Nágpúr, Hoshungabád, Ajmere and Jhansie; that of 90° the whole of the Panjáb and the North-West Provinces, nearly to the confines of Behar. Then, crossing the Ganges, it passes to the north of Gya and Hazareebaugh, and, bending to the south, runs a little to the west of Cuttack. Bombay on the one side of India, and Saugor Island and Jessore on the other, lie just within the isotherm of 85°. Goalparah is the only station the mean May temperature of which does not exceed 80°. That of Seebsaugor is 81° 4′, and that of Cachar 82°.

In June the setting in of the rains is accompanied with a great and general fall of temperature, except in the Panjáb and the western portion of Rájpútána (also probably Sind and the Bikaneer Desert, but data for these tracts are not at present available); and these, therefore, become the region of greatest heat as well as (probably) the lowest barometric pressure in the Peninsula. After June, however, the scanty rains, together with the retreat of the sun in declination, conduce to a gradual fall of the temperature, and in September the mean temperature of the Panjáb is but two or three degrees above that of the North-West Provinces or Bengal. About the end of the month, or the beginning of October, the whole region, except Western Rájpútána [and Sind?] has a nearly uniform temperature.

In Upper Assam the seasons are less strongly marked. Here, as in the temperate zone, the heat increases gradually and uniformly up to July, and, from June to September, remains about 4° above that of the delta. Even at Goalparah, at the mouth of the valley, no fall of temperature marks the burst of the monsoon rains, but a steady rise of about 1° per month after April brings the mean temperature up to between 82° and 83° in July and August, and is followed by an equally steady fall till October. In Assam, the hot season, as understood in Northern India, is unknown. After October the fall of temperature is rapid and unequal, ending in the state of things already described at the outset.

In January 1871, the mean temperature of the delta was a little below the average of the four years, the greatest depression being at Jessore. It was also below the same average at Cuttack, and in the Central Provinces south of the Sátpúra range. On the other hand, on both coasts of the bay, the temperature was somewhat higher than the average, and the same was the case in Behar and part of the North-West Provinces. At Benares the excess amounted to 1·6°. At Roorkee, again, the mean temperature was 1·3° below the average; and thus the abnormal elevation of temperature at Benares, as compared with Roorkee on the one hand, and with Nágpúr on the other, amounted to 2·9° and 4·2° respectively; comparing this with the abnormality of relative pressures already noticed at page 26, it will be observed that the relation of pressure to temperature in the seasonal irregularities of these elements is the same as in their normal distribution above noticed.

In February the temperature was above the mean everywhere except at Nágpúr; and even there the depression was less than in January. The excess was greatest at Berhampore, and at this place, Dacca, Hazareebaugh, and Patna it exceeded 2°. At Roorkee, which in January was 1·3° below the mean, the February temperature was 2·5° above it, and the local excess lasted through the two following months.

In March and April the temperature again fell gradually below the average; first in the delta and the lower part of the Gangetic plain, and afterwards more generally—the Central Provinces, Patna, Hazareebaugh, and the stations on the east side of the bay being the last to remain above the mean. In May, owing doubtless to the early commencement of the rains, the depression of temperature below the average was universal, amounting to more than 4° at Nágpúr and Roorkee, and to between 3° and 4° at Cuttack, Jessore, Hazareebaugh, Berhampore, Monghyr, and Benares. With the exception of Patna and Madras, and one or two other stations temporarily, all the stations enumerated continued to enjoy a temperature below the average up to the end of the rains. At Benares, especially, the deficiency amounted to more than 2° throughout. In October, however, the fall of temperature was less than usual, and November and December were warmer than usual at nearly all the stations enumerated, especially at Cuttack, Benares and Patna, and in the Central Provinces.

Humidity.

The deviation of the mean humidity of each month of 1871 from the averages at different stations is shown to have been very irregular. The humidity was exceptionally high at Patna during the first five months of the year, and equal to or below the average during the last four months. At Jabalpúr, Benares, and Roorkee, the first especially, it was unusually high from May to September. It was generally a little above the average in February, except at Dacca and stations on the coast line. In March this was the case only in the Delta and the lower Gangetic plain. In April this excess increased, and in May and June it was very general over the whole of Northern and Central India, while Port Blair and Madras were rather below the average. During the rains the difference became less, with the exceptions already mentioned, and in October the humidity was generally about the average, or a little below it. This last was especially the case at Nágpúr. In the last two months of the year the humidity was somewhat greater than usual at False Point, Saugor Island, Calcutta, Benares, and Roorkee; in November also at Madras and Darjeeling; while in the Central Provinces and Patna it was decidedly below the mean. On the whole, in 1871, the air was unusually moist, and, as will presently be seen, the rainfall was early and heavy.

Rainfall.

The rainfall of 1871 was unusually heavy in Northern India. In Calcutta it was the greatest on record, exceeding even that of 1868; and in many parts of the country the floods on the low-lands were of such extent and depth as to breach the railways, and cause serious interruptions to the traffic. To this general abundance there were, however, some remarkable and apparently capricious exceptions. In the tea districts of Eastern Bengal, in Lower Assam, and on the intervening plateau of the Khasi Hills, the rainfall of the year was considerably below the average; and the station of Cherrapoonjee, long renowned as the seat of the heaviest recorded rainfall in the world, received less than three-fifths of its usual quantity. On the other hand, in Upper Assam, as in Northern India, the excess was very great, amounting to one-third more than the average fall. In Orissa, again, as far west as Sambalpúr, the rainfall was in general somewhat below the average, while it was greatly in excess in the western part of the Gangetic delta, in Chota Nágpúr, and the Central Provinces, in Northern Behar and Tirhoot: it was exceedingly heavy at Chuprah, for instance, where it was more than double the average annual quantity, and at Sewan.

So much may be stated with tolerable confidence, since the registers of many neighbouring stations bear concurrent testimony to the facts, and show a gradual variation from one tract to another. Other cases, however, are more open to doubt, *viz.*, those in which the registers of neighbouring stations exhibit great and abrupt differences, such as Jajipore in Orissa, Choadangah in Krishnaghur, Madaripore in Backergunge, the Civil Station of Pubna, and Dum-Dum and Baraset in the immediate neighbourhood of Calcutta. Although all practicable precautions have been taken to prevent error by adopting the same kind of gauge, and by laying down distinct and detailed rules for placing the gauges and registering the rainfall, it is certain that the rules and directions are sometimes disregarded, and it is impossible to assert in any particular case that the register has not been vitiated by carelessness, or by idle tricks being played with the gauge, such tricks as are recorded in many a mofussil anecdote. It must be borne in mind that many, perhaps the majority of those who take the readings, perform the duty mechanically, and though incapable of consciously sending in false returns, would measure in good faith, and without suspicion, whatever water there may be in the gauge; and it may not always be practicable to find a suitable place for the gauge where it is safe from the curiosity and experiments of irreverent idlers. While, therefore, on the whole, the registers testify by their general agreement to their being at least approximately accurate, and while I should certainly not be justified in asserting that these anomalous readings are really erroneous, I should hesitate to accept as genuine some of the more striking local anomalies above adverted to, in the absence of confirmatory evidence.

Omitting these from consideration, the distribution of rainfall in 1871 was as follows:—The fall exceeded 100 inches on the outer margin of the Soonderbuns, and at Noakhally amounted to 130 inches. Also in Sylhet and Mymensing, over a wedge-shaped tract, extending from the Jaboona at Atteah to the confines of Sylhet and Cachar, and to the water-shed of the Garrow Hills, and in the upper part of the Assam Valley as far down as Nowgong. It was above 90 inches immediately around Calcutta, on both sides of the Hooghly estuary, and over the eastern part of the Delta, including Ferozepore and Burrisaul, Comillah and Furreedpore, Rungpore and Julpigoree. Dacca, lying within this area, offered an exception; and a tract in Lower Assam, from Goalparah to Tezpore, had also less than 90 inches. The lowest quantity recorded in this latter tract was at Gowhatty, which received no more than 56 inches.

In the district of the 24-Pergunnahs, east of Calcutta, and in the southern part of Jessore, the fall was between 70 and 80 inches; but in the northern part of this district, including the stations of Jessore and Kooshteah, it exceeded 80 inches. Nattore, Titalya, and Purneah had between 80 and 90 inches. The rainfall exceeded 70 inches over the greater part of the Midnapore and Hooghly Districts, and in the eastern part of Krishnaghur. A strip of country between the Bhugirutty and Jellinghy, from Ranaghât to Berhampore, received rather less than 60 inches, but elsewhere the fall exceeded that amount, up to the Rajmehal Hills and the borders of the Sonthal country. On the plateau to the westward, from Raneegunge to the confines of the Sôn Valley, and from the Damoodah to the Ganges, the average fall was between 50 and 60 inches, but at Bhaugulpore less than 40 were recorded. At Ranchee, Purulia and Bancoorah more than 60 inches fell, but almost everywhere to the south of this line the quantity was less than 60. In the Sôn Valley, east of that river, a region including Gya, Sherghotty, Arungabad, and Jamooie had a fall of less than 50 inches; but to the west of the Sôn, and everywhere to the northward, from 50 to 80 inches were measured. Thus, Patna had 59, Arrah 61, Buxar, Chuprah, and Mozufferpore between 70 and 80, and Sewan not less than 84 inches. The region of this unusually heavy rainfall, therefore, coincided approximately with that of the low pressure described at page 26, or possibly lay a little beyond it in the direction of the rain-bearing wind, as was the case in Lower Bengal and Orissa in the monsoon of 1868.*

January was a dry month throughout Bengal, and February scarcely less so. In March there were some heavy showers, heavier than usual for the time of the year, especially in the Midnapore District; and generally in Lower Bengal, the rainfall in the month was about twice or three times as great as the average quantity. In April the rain was frequent and copious, and extended over the whole of Bengal and Behar. The rains may be said to have set in in this month, not, as in most years, with a single well-marked burst of rainfall, but by the gradual increase in the frequency and quantity of the showers. May was in all respects like an average June, except in the districts north of the Delta and in Assam, where, with local exceptions, the fall was not heavier than usual. From this time up to September the rain poured on steadily in somewhat greater quantity than usual, and in the latter month, just before the close of the rains, an excessively heavy fall took place in Tirhoot and the adjoining districts of Chuprah and Chumparun. The last three months of the year were, on the whole, drier than usual.

Winds.

The wind system of Northern India is very different from that of the adjoining seas. Instead of two monsoons from NE and SW prevailing alternately during almost equal periods of the year, we find a great diversity of prevalent wind currents, depending on the direction of the mountain ranges and valleys and proximity to the sea; and, with respect to period, to be classified rather under three than two distinct seasons, excepting, indeed, in Upper Assam where the normal monsoons prevail. Thus, in the cold weather months (November to January) calms are very frequent, or the winds are light and flow from Upper India and the Panjáb down the broad valley plains of the Indus and the Ganges. A small portion of the latter current is drawn southwards across the hilly water-shed of Central India to join the NE monsoon of Central India, which appears to have a distinct source in the country to the south of the Sátpúras and of their easterly prolongation in Chota Nágpúr. Only in Upper Assam, and possibly in the Upper Panjáb at the two extremities of the Himalaya, the cold air of the trans-montane region finds an outlet to the southward, and streams in the former case across the low Jynteah and Naga plateaux and the Tipperah Hills to the Bay of Bengal, in the latter over the broad plains of the Lower Indus to the Arabian Sea.

With the approach of the hot weather, the winds of Northern and Central India draw round to the westward, and dry currents from the mountains and desert country lying west of the Indus radiate out over the whole region as far as the Gangetic delta, becoming heated in their passage over the plains, until they form the well-known hot winds of April and May. On the coasts of Orissa and the Delta, however, sea-winds begin to predominate as early as February, and gradually encroach upon the land winds, so that in the following months the opposing streams meet more or less obliquely in the hilly region that lies to the west of the Delta and of the Orissa plains. These sea-winds are, however, essentially local, restricted to the neighbourhood of the coast where they form a lower current of no great vertical thickness, and must be distinguished from the SW. monsoon proper, which does not set in till June. In Sind and the sandy plains of Bikaneer, southerly winds penetrate further inland, and their influence is felt as far as Multan and Ajmere, though the heat and extreme aridity of the region traversed by them prevents any condensation of their moisture such as takes place on the eastern side of the Peninsula.

---

* See Meteorological Report for 1869, Pt. I-II, p. 20.

In June the SW monsoon sets in over the seas that enclose the two sides of the Peninsula; that west from the Arabian Sea, sweeping across the Sahyâdri Mountains, blows as a west or WSW. current over Central India up to the very confines of the Gangetic plain, and across the Peninsula even to the coast of Orissa. The lower current from the Bay of Bengal passes into the funnel-shaped opening occupied by the Delta, and then turning westward passes up the Ganges plain to the Upper Panjâb; while upper currents sweep over the Hazareebaugh plateau in the same direction, and across the hills of Eastern Bengal towards the valley of Assam and the river gorges that afford an entrance to Tibet. In July and August the monsoon is at its height. It slackens in September, and the winds become gradually weaker and more conflicting up to the middle or latter part of October, when they are succeeded by the gentle land winds and calms of the winter months.

In regard to velocity, the law of the winds is extremely simple. The velocities vary almost exactly with the differences of temperature in neighbouring regions. In respect to space, this is shown by its high velocity at stations on the coast line as compared with those 60 or 80 miles inland, and by the low velocity and frequency of calms at stations in the Gangetic plain where decrements of temperature are small over extensive areas. In respect to period by the high velocity in May and the earlier part of June when there is the greatest difference of temperature between the interior and the sea, and when the isothermals are most crowded, and by the quiescence of the air in October, or November when the temperature is moderate and comparatively uniform.

The steadiness of the winds by no means necessarily varies with the velocity. Thus, for instance, at Calcutta, the NNW. wind in November is as steady as the south wind in June, but its mean velocity in the former month is only two-fifths of that in the latter. The epoch of greatest steadiness varies indefinitely at different stations. At Calcutta on the mean of ten years it falls in April; at Saugor Island on the mean of three years in May; at Dacca in July, and at Berhampore in December. It may be objected that a period of three years is too short to determine a point of this kind with any approach to confidence, and this would, no doubt, be true in a country in which the winds are less regular than in India; but I am disposed to believe that the more striking features of the present wind tables will be found to re-appear with little modification, when a longer series of registers shall have been accumulated and discussed.

In the first three months of 1871, the winds of Bengal were such as are usual at the time of year, except that in the early part of January they were somewhat more northerly. In April the fall of atmospheric pressure in Behar and Western Bengal noticed in a previous part of the Report was accompanied by a great weakening of the land winds of that region, and by a veering of those of the Delta towards SSE. and SE. At the same time the depression shown in the Roorkee register appears to have weakened the land winds of the North-West Provinces, and at Benares, amid much variation, easterly winds were, on the whole, predominant over those from westerly quarters; whereas the latter, as a general rule, have a great preponderance in this month. In May the excess of easterly elements was still more decided; and in the latter half of the month, the winds were such as characterise the SW. monsoon, but more easterly than is usual in the easterly part of that season, especially in Behar and the North-West Provinces. During these months the velocity of the winds in Lower Bengal was much below the average, and this again is a characteristic of the monsoon as contrasted with the hot weather. The excess of easterly winds continued during June, and it was not until July that the monsoon assumed its normal character. On the return of the winter monsoon in October and November, the land winds set in much as usual in Behar and the North-West Provinces; but in Bengal they were far less steady, and up to nearly the close of the year the westerly or north-westerly winds were decidedly weaker than on the average.

I may here notice that the meteorology of the year further confirms the conclusion at which I arrived two years ago;* that the irregularities in the distribution of pressure and the consequent diversion of the wind currents, which may occur in any part of India, are generally persistent for many months, and thus impress a decided character on the season. We have seen this in the persistence of an abnormal barometric depression in Behar, the North-West Provinces and a portion of Central India, during the hot weather and the earlier part of the ordinary rainy season, and the consequent failure of the usual land winds, accompanied by early and heavy rains. Whether this depression was an effect in the first instance of the high temperature shown in the Benares register in January, and generally in the month of February, it is, perhaps, premature to pronounce upon; but seeing how intimate is the relation in general between temperature and pressure during the dry months of the year, I cannot but think this dependence probable.

---

* Asiatic Society's Journal, Vol. XXXIX, Part 2, and Meteorological Report for 1869.

Meteorology of the North-Western Provinces in 1871.

30. Dr. Murray Thomson, the Meteorological Reporter for the North-Western Provinces, has favored me with the following summary of the meteorological phenomena as recorded at the observing stations in that portion of the country:—

General character of the year

Summary of the weather in 1871.—The months of January and February did not differ greatly from the same months of previous years. The month of March was drier, and slightly warmer than usual. The weather of April was likewise normal, but that of May was exceptional; instead of the hot dry atmosphere which commonly characterises this month, the air was much cooler and far more moist. The dry, hot westerly winds were replaced by moist south-east or easterly ones. Few clouds are usually seen in May; but in May 1871 the sky was clouded over for fully two-thirds of the month. The cause of these unusual features was a relative depression of the barometer over the North-Western Provinces compared with that of Bengal. This determined the setting in of the south-east and easterly winds, which are always moist winds in this part of India. This low air-pressure continued into June, and determined the early onset of the monsoon rains, which, although usually not well established until the middle of the month, had in this year fully commenced by the 3rd or 4th. This accession of the rains at once modified the fervid heat of the hot weather, replacing it by an atmosphere moister and cooler. There were two periods in the month in which rain fell heavily; these were from the 10th to the 15th, and from the 22nd to the 27th and 28th. The want of air-pressure in June was restored in July, which had rather a higher barometer than usual; but as it was also the case in the Lower Provinces, this circumstance did not interrupt the monsoon current. The wind was easterly or south-easterly, the sky was covered with clouds, and rain fell on an average at all the stations on 19 out of the 31 days. This large accession of moisture kept the mean temperature below the average, as it had done in the two previous months. Notwithstanding a slight rise in the barometer in August, and also a change of wind from east to west, the great humidity and cloudy sky prevailed during that month. Rain also fell very heavily in the extreme eastern districts of Goruckpore and Benares, and in the north-western districts of Roorkee and Dehra, and in the western one of Agra; the intervening tracts had a lower rainfall than usual. A slightly lower air-pressure was observed in September, and easterly took the place of the westerly winds of August, and the moist atmosphere and cloudy sky were still maintained; but the rainfall, except at Lucknow and Goruckpore, was rather under than over the average, and the mean temperature was much the same as in former years. At the end of September the monsoon wind, which, as before remarked, is in these provinces south-east, changed to a west or north-west, and the rains came to an end. No rain fell in October, but the humidity of the atmosphere continued above the average, possibly from the clear sky and the rapid evaporation which ensued at the termination of the rains, accompanied with a falling temperature. During the first-half of November the humidity was still relatively high, and the wind varied between west and north-west and east and south-east. In the second half of the month the wind was nowhere easterly, and was either westerly, or a calm prevailed. The mean temperature fell steadily all through the month. The more agreeable cold weather began with all its usual features in the latter half of November. A change, however, ensued about the 19th of December, the wind went round to east, clouds gathered, and rain fell at all the observing stations. Although the humidity was rather above the mean, the temperature was the same as the average.

The more prominent features of the year were, first, the moderation of the greater heat of the hot weather in April and May, especially during the latter month, by a more than usually humid air and cloudy sky, and consequently a lower air temperature, and the early onset of the rains along with a large average rainfall.

Barometric pressure.

The air-pressure during January, February, and March was greater than it had been in these months in 1870, but less than in 1869, 1868, and 1867. In April it was still less than in these years, and also less than in 1870. In May there was a marked alteration; the air-pressure was higher than it had been in the four previous years, the difference being most striking when the means of 1870 are compared with those of 1871. But, notwithstanding that the barometer was high in this month in the North-Western Provinces, it was still higher in Bengal. This circumstance explained the unusual weather which prevailed in May, especially the frequency of E. and SE. winds instead of W, and the more moist instead of the very dry air which is characteristic of this month in this part of India. The air-pressure in June, except in Roorkee, was slightly less than it had been in the previous years. In July the reverse of this was the case. In August it was the same as in July, except at the stations of Meerut and Bareilly. A change ensued in September, when, except at Roorkee, the barometer stood lower than the average. In October and November, leaving out Roorkee and Benares, the air-pressure was the same as in September. In December the barometer read higher, at all the stations except Benares, than the average of the last three or four years.

Temperature.

There was but little to notice on the temperature of the first four months, as in these it was quite normal. But in May it was markedly less than in 1870, 1869, 1868, and 1867,—an effect no doubt due to the relative lower atmospheric pressure which prevailed in the North-West Provinces, which induced the cooler SE. wind to blow over the area instead of the hot W. wind, which is more usual. The same favorable difference was observed in June, and likewise in July and August, but to a less extent. In September the heat was about 1° less than the average in the N. and W. stations, and from 1° to 3° less in the E. places. For the remainder of the year the temperature was very nearly the same as that in previous years.

Humidity.

In January and February the humidity was more than it had been in 1870 and 1869, but less than 1868 and 1867. In March again it was markedly less than it had been in any of the previous four years. In April this element of the weather was in average amount, but in May it was strikingly greater, so was it in June and July. In May it was a good 10 per cent. more than the mean of the three preceding years. In August and September it slightly exceeded the average, except when 1868 is compared, for in that year the humidity was much below the normal amount. In October and November it was rather below the other years, omitting in this 1868. In December the humidity was in usual amount.

Rainfall.

In the stations to the NW., and also in those nearer the hills, there had been rain heavier than usual in January and February, except in Benares and Goruckpore; there was no rain in March, but there was a little rain in April at nearly all the places, and this is not usual; it may be accounted for by the frequent storms which took place, most of which ended in a shower. In May also there was an unusually large quantity of rain. The exceptional coolness and humidity and the state of the air-pressure in this month have already been remarked on. The rainy season had set in by the 3rd or 4th of June, and continued till near end of September. There was no rain in October or November, but in December there was fully more than the average quantity. The rainfall has been already remarked on in the general summary.

Winds.

The prevalent winds in the North-West Provinces in 1871 were the same as in former years, namely, in the cold weather months, January, February, March, October, November, and December, W. winds in the more easterly parts, and NW. in places more to the N. and W. In the months of April and May strong hot W. winds are observed all over the North-West Provinces; these hot winds usually set in about 10 or 11 o'clock in the day, and die away towards sunset. As has been already remarked, there was a great absence of these hot winds in 1871, especially in the month of May. During the rain months of June, July, August, and September, the wind which blows most frequently in the more easterly places are E., and in the place to the north and west the wind is NW. In August W. and SW. winds were very often observed; this is unusual, except in Allahabad, Benares, and Agra.

Meteorology of the Central Provinces in 1871.

31. Dr. Townsend, the Sanitary Commissioner of the Central Provinces, thus analyses the meteorological observations, the records of which were submitted to his office:—

The results of the analysis of the meteorological records for 1871 may be briefly summarized as follows:—January was slightly colder and drier than in the corresponding month of 1870. February was slightly warmer, and in the middle of this month thunderstorms, accompanied with hail, occurred in many parts of the province. In March and April south-westerly winds were less frequent and the temperature was higher, and the humidity less than in the corresponding months of 1870, which were unusually cool. In May southerly winds were more frequent, and the great heat and dryness that usually prevails was softened by frequent showers.

The monsoon set in early in June. Taking the whole province, the fall of rain was rather above the average of the previous five years; it was, however, most unequally distributed. Over Nimar, the most westerly, and over Chanda, the most southerly district, the fall was scanty; over the central and northern districts it was above the average, while over the eastern districts it was again scanty. The heaviest rainfall occurred in June and July; in August it was generally below the average. In September storms with heavy rain were frequent in all parts of the province, but in the end of that month the rains ceased; the showers, which usually occur in October, and which are so beneficial to the crops, were wanting, and the rice-crop was generally below the average Through the months following the rains, north-westerly winds were prevalent, the morning dews were scanty, and the weather was unusually dry and warm, so much so that before the end of the year rain was generally wanted even in those districts over which the monsoon fall had been abundant, as well as where it had been scanty; the required rain fell over the Sátpúras in the latter end of November, and over the northern districts of Jabalpúr and Sagar. In the last few days of December, and at the close of the year, the prospects of the crops in those districts were good; but in the southern and western districts no rain fell and the crops suffered.

Meteorology of Oudh in 1871.

32. A report on the meteorology of Oudh, which has been prepared by Dr. Bonavia, the Superintendent of the Department of Science in that Province, furnishes the following information.

The meteorology of 1871 presented some peculiarities worthy of note—

1st.—There was a general absence of hot winds during their usual season.

2nd.—There was very heavy and continued rain in July and September, more so than in any of the three previous Julys and Septembers.

3rd.—The mean temperature of the rainy months in 1871 was considerably below that of the same months in previous years, and the mean temperature of November 1871 was considerably higher than that of the previous Novembers.

The consequence was an entire alteration of two of the ordinary conditions of disease, and displacement of the usual seasons of cholera. In making a comparison of the rainfall, temperature, and outbreaks of cholera for four consecutive years, *viz.*, 1868, 1869, 1870, and 1871, I find that it affords some valuable information. In 1868 and 1869 there were no extraordinary phenomena. Hot winds came in their proper season, and cholera was an accompaniment of the rainy season of both years. In 1870 the mean temperature of the hot months was considerably lower than that of the same months in previous years. In the rainy months the amount of rainfall exceeded that of the previous year by upwards of 22 inches, but the temperature was comparatively low. The temperature of the winter months was pretty much the same as that of the previous year. No cholera epidemic occurred in any part of the year 1870.

In 1871 the mean temperature of the hot months was considerably lower than that of the same months in 1870. The rains were even heavier than in 1870, and especially in the months of July and September. The temperature was comparatively low. No cholera occurred in the rainy season of 1871; while the mean temperature of November 1871 was 8·3° higher than that of the same month of 1870, and 420 deaths from cholera were reported in Lucknow in that month.

November 1871 was comparatively a hot month, and also a moist month, owing to the very heavy rains of the previous September. It would, therefore, appear from the comparison of even a small number of observations that, provided a certain degree of dampness and a certain degree of temperature concur, cholera might be developed in any part of the year.

Meteorology of the Panjab in 1871.

33. The complete report of the meteorology of the Panjáb for 1871 has not yet been issued, but from the portion of it which has reached me, I extract the following particulars regarding the temperature and rainfall:—

Temperature.

The following table is meant to show how much the mean temperature of each month differs in increase or decrease from that of its predecessor. A glance at such a summary will show that during the first six months, January to June inclusive, the greatest monthly increase of temperature occurs in April and May, and the greatest decrease during the latter half of the year, in November January is the coldest month, and June the hottest:

STATIONS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Lahore	54·0	60·4	67·2	78·6	90·3	93·6	91·5	90·5	86·4	78·3	65·5	55·5
Rawalpindi ...	50·8	56·6	62·6	74·1	86·3	92·9	90·7	88·1	85·0	74·5	62·1	53·4
Dera Ismail Khan ...	54·3	59·3	67·5	78·5	89·6	95·2	93·9	91·7	88·6	76·8	64·1	55·4
Sialkot	56·0	60·5	66·3	76·7	89·3	90·5	87·4	86·4	85·7	77·7	63·5	54·3
Mean of the four stations.	53·8	59·2	65·9	76·8	88·9	93·1	90·9	89·2	86·4	76·8	63·8	56·4
Mean difference between each month.		5·4+	6·7+	10·9+	12·1+	4·2+	2·2—	1·7—	2·8—	9·6—	13·0—	7·4—

Comparison of mean maxima temperatures in the sun's rays for each month in the years 1867, 1868, 1869, 1870, *and* 1871 *in six stations.*

Months.		Stations.					
		Lahore.	Multan.	Dera Ismail Khan.	Rawal-pindi.	Sialkot.	Ludiana.
January	1867	100·9	124·2	117·	110·8	97·0	...
	1868	104·	117·	111·9	101·3	93·7	...
	1869	113·37	119·33	...	102·1	96·0	...
	1870	120·	...	...	116·7	103·83	...
	1871	119·9	119·79	...	112·1	99·26	...
February	1867	103·1	131·2	120·	112·	102·	...
	1868	111·	119·2	116·2	97·2	89·	...
	1869	113·37	123·33	...	108·2	...	...
	1870	127·4	...	...	120·7	107·85	...
	1871	122·8	126·07	...	111·2	98·28	...
March ...	1867	111·	144·	135·5	125·7	117·	...
	1868	123·	...	122·9	112·2	102·	...
	1869	120·87	...	...	105·2	98·	...
	1870	132·18	...	...	128·3	116·19	...
	1871	...	144·61	...	125·0	117·64	...
April ...	1867	...	154·3	142·9	130·2	123·	...
	1868	124·	145·	137·	126·5	122·	...
	1869	148·2	...	...	131·	123·8	...
	1870	148·2	...	...	138·1	126·75	144·23
	1871	146·76	...	...	138·3	129·53	...
May ...	1867	...	161·6	152·7	139·9	132·	...
	1868	...	156·	143·7	145·8	136·	...
	1869	158 75	...	...	155·2	142·51	...
	1870	157·	...	...	154·3	139·0	157·19
	1871	150·2	165·93	154·29	149·7	131·81	...
June ...	1867	...	152·8	152·4	152·2	132·0	...
	1868	...	156·8	148·9	157·4	136·4	...
	1869	156·88	...	...	155·4	138·23	...
	1870	151·6	...	...	153·5	138·5	151·33
	1871	149·3	163·80	154·36	153·9	133·7	...
July ...	1867	147·4	152·2	146·6	148·1	131·	...
	1868	...	153·	146·	146·6	126·	...
	1869	147·09	...	...	146·7	131·63	...
	1870	152·	...	...	147·9	133·67	146·32
	1871	148·77	161·77	153·1	151·5	130·74	...
August	1867	140·8	148·8	147·4	140·7	130·0	...
	1868	...	152·	145·	148·8	130·	...
	1869	151·79	...	...	157·4	132·45	...
	1870	148·55	...	...	141·3	130·64	146·19
	1871	155·5	161·77	152·03	150·3	133·13	...
September	1867	141·2	146·73	144·3	141·17	130·	...
	1868	...	151·	...	147·	131·	...
	1869	146·66	...	...	145·03	128·03	...
	1870	141·8	...	...	139·7	126·8	143·63
	1871	148·03	166·03	149·0	143·2	129·56	...

Comparison of mean maxima temperatures in the sun's rays, &c.,—continued.

MONTHS.		STATIONS.					
		Lahore.	Multan.	Dera Ismail Khan.	Rawal-pindi.	Sialkot.	Ludiana.
October	1867	133·3	136·7	135·	136·4	113·	...
	1868	142·	142·	...	137·	123·	...
	1869	136·8	...	...	138·1	121·86	...
	1870*	142·4	...	...	140·6	121·19	143·03
	1871	142·61	162·04	125·54	135·9	130·25	...
November	1867	128·8	128·38	125·6	125·2	111·	...
	1868	132·	131·	...	125·	113·	...
	*1869	128·5	...	...	125·2	111·63	...
	1870	131·3	...	...	128·5	112·4	131·63
	1871	131·33	...	...	128·0	114·1	...
December	1867	108·1	121·28	112·61	105·	99·38	...
	1868	111·	116·	...	105·	98·7	...
	1869	118·4	...	...	112·9	101·38	...
	1870	116·3	...	...	112·1	95·84	124·0
	1871	114·06	...	...	105·5	97·32	...

Rainfall.

The total rainfall in each of the four stations shown in the following table does not differ much from that of the previous year :—

Years.	January to April, inclusive.				May to August, inclusive.				September to December, inclusive.				TOTAL RAINFALL IN INCHES.						
1867	5·5	2·1	9·6	8·8	13.4	3·2	11·8	38·2	1·2	1·2	0·1	...	...		...	...	...	...	...
1868	8·4	4·8	8·4	12·6	6·2	0·1	12·7	29·8	0·5	0·2	2·1	0·8	Lahore	...	20·1	15·1	20·5	9·2	8·7
1869	4·6	7·7	17·0	11·0	12·3	6·1	10·1	35·0	3·6	...	0·3	0·2	Multan	...	6·5	5·1	13·8	2·0	1·9
1870	0·4	0·8	1·7	5·5	8·2	1·2	26·6	26·7	0·6	...	1·7	0·6	Rawalpindi	...	21·5	23·3	27·4	29·0	28·5
1871	2·8	0·3	6·2	7·1	5·0	1·2	20·8	23·7	0·9	0·4	1·5	1·2	Sialkot	...	47·0	43·2	46·2	32·8	32·0
STATIONS.	Lahore.	Multan.	Rawalpindi.	Sialkot.	Lahore.	Multan.	Rawalpindi.	Sialkot.	Lahore.	Multan.	Rawalpindi.	Sialkot.	Years.		1867	1868	1869	1870	1871

History of the chief diseases in 1871.

Cholera—remarkably few cases.

34. The chief diseases from which the European Troops suffered in 1871 may now be considered, and in dealing with them I shall at the same time, so far as the materials for the purpose can be collected, record the history of each as it affected the Native Troops, the prisoners, and the general population of the country. And first with regard to Cholera. The singular absence of this disease among European Troops in Bengal during 1870 was remarked on in last Annual Report. It was then shown that among them the mortality from this cause during a series of 13 years had never been so low; the ratio was but ·63 per 1,000; there had been throughout the whole European Army of Bengal only 49 cases, of which 21 proved fatal. The year 1871 has displayed a similar immunity, and very nearly in the same degree, for the deaths have equalled only ·71 per 1,000. Table XXIII is devoted to illustrate the distribution of Cholera, both geographically and by months. From this it appears that out of 41 cases 25 proved fatal. To individual outbreaks special reference will be made immediately, but the general facts which this Statement exhibits are very remarkable; the disease was confined in this Presidency almost entirely to the second group of stations. Excepting two cases at Dum-Dum and one at Jhansie, not a single European soldier in any other part of Bengal was attacked with Cholera. In the other

Presidencies the disease was confined chiefly to the outbreak in the 18th Hussars at Secundrabad in the month of May. In this Presidency the cases occurred mainly in the month of November. Before that time, although, as will hereafter be noticed, there were indications that Cholera threatened, the actual number of attacks had been fewer than in any previous year of which there is any record. In Madras, in 1871, the deaths, which almost all occurred at Secundrabad, equalled 3·32; in Bombay two fatal cases give a ratio of ·09 per 1,000.

Cholera among the women and children.

35. The Statement showing the distribution of Cholera among the women and children of European Regiments—Nos. XI and XII of the series for women and children—repeats the history of the disease as it occurred among the men in a very remarkable manner,—the same absence over the country generally, the outbreaks in the second group of stations of Bengal especially in November, and at Secundrabad in May. Both women and children suffered more in proportion to their strength than the men. Among the former, the death-rate from this cause was 2·45, and among the latter 1·0 per 1,000. In Madras the ratios are much the same, but in Bombay, during 1871, not a single woman or child was attacked with Cholera throughout the entire Presidency.

Cholera among Native troops.

36. The history of Cholera among the Native Troops of Bengal accords entirely with the general distribution of the disease as indicated by the statistics of European soldiers on the one hand, and by those of prisoners and the general population on the other. The number of cases was not large. They were most numerous in Eastern Bengal, in a part of the country where there is no European garrison, but where both the jails and the people generally were attacked with considerable severity, especially in the two last months of the year. In the Looshai Force there were 22 cases and 15 deaths among Native Soldiers, chiefly of the 4th Goorkha Regiment. The occurrence of individual cases in the Upper Provinces in May—2 at Delhi, 1 at Peshawur, and 1 at Bunnoo—is of much interest in connection with the other evidence of a very large portion of Upper India having been affected by Cholera in that month, although the indications were but few and scattered over a vast area. The cases occurring at Lucknow in November, and the solitary attack at Kherwarrah on the 11th of the same month shortly before the Delhi outbreak, all deserve attention.

Cholera among the prisoners.

37. Among the prisoners in the Upper Provinces not one was attacked with Cholera. In the Central Provinces only four suffered from the disease. All were in the Nagpore Jail, and it is remarkable that the two first were seized in the month of May, on the very same day as the outbreak commenced in the 18th Hussars at Secundrabad. In Oudh there were seven cases among the prisoners. There were three at Jounpore, but with this exception the jails of the North-Western Provinces were free of the disease,—a distribution which coincides remarkably with the facts recorded in the general statistics of mortality among the people. In Behar, the disease was confined chiefly to the Patna Jail, where 15 cases occurred in November, at the very time when the European Troops in the vicinity also suffered. In Bengal Proper there were 132 admissions, of which 52 were fatal. Compared with previous years, even in Bengal Proper, the prisoners enjoyed an immunity from Cholera which has never been previously experienced.

Statistics of Cholera among the general population of India.

38. The statistics of Cholera among the general population are given in the annexed Statement, in which the deaths registered as due to this disease in each month of the year are entered, and the total mortality of the year from this cause is compared with that of the year previous. The Statement is still incomplete; for, although for the first time Bengal Proper has furnished statistics for the entire year, there are large tracts of country belonging to Native States from which no returns have been received. In none of them has the registration of deaths, so far as I am aware, been attempted, and it may be some time before the introduction of such a measure can be hoped for. Arrangements have, however, been recently made for collecting all the facts regarding the occurrence of Cholera within these States which come to the knowledge of the Agency Surgeons, and by this means much important information may no doubt be gained.

Statement showing the Deaths registered from CHOLERA *in the different Provinces during the year* 1871.

PROVINCE.	Estimated population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL DEATHS.	RATIO OF DEATHS PER 1,000.	RATIO FOR 1870.
Bengal	Not stated	203	220	307	1,365	1,381	1,033	937	786	1,210	2,507	3,505	6,914	20,396	...	* 65·11
North-Western Provinces	20,588,653	75	120	164	617	625	427	196	224	271	354	228	173	3,473	·11	·44
Panjab	17,481,189	17	14	22	46	46	50	26	21	20	18	38	51	369	·02	·03
Oudh	11,198,095	216	95 *	101	128	102	99	289	345	700	3,610	6,476	3,861	16,032	1·43	1·37
Central Provinces ...	7,266,373	...	...	...	2	3	3	1	3	...	...	...	7	19	·003	·01
Berar	2,184,945	2	1	...	2	...	45	175	71	135	106	28	16	581	·27	·23
British Burmah ...	2,101,058	34	33	71	5	1	9	...	4	2	1	1	1	162	·07	·80
Madras Presidency ...	24,555,046	4,474	3,156	1,652	1,572	1,108	1,279	1,330	906	666	269	370	873	17,656	·71	2·28
Bombay Presidency ...	14,260,062	351	237	174	146	591	804	1,005	1,014	555	599	174	205	5,855	·41	·19

* Total deaths registered from Cholera from July to December 1870.

General distribution of Cholera over India shown in the map.

39. The general distribution of Cholera over the country is indicated in the map. Of the history of the disease in the different Provinces more will be said presently. The great general facts to be noted now are the remarkable immunity of the Central and Upper Provinces, the occupation of the eastern portion of the North-Western Provinces and Oudh, the epidemic prevalence extending from the endemic area up to the north-east of Bengal Proper, and the large expanse of country covered by the disease in both the Madras and Bombay Presidencies. It must be remembered that a single map of this nature can pretend to little more than displaying very generally the area of epidemic prevalence. To attempt to show particular outbreaks, the relative intensity by months, or other details, would necessitate a series of many elaborate maps which would prove extremely confusing. For the illustration of the history of Cholera in each Province, a map has now been devised with a Tabular Statement in the margin, and the two together will, it is hoped, afford a very clear account of the events of each year.

Cholera among the general population in Bengal Proper.

40. Containing, as it does, the endemic area of Cholera, the facts regarding Bengal Proper first merit attention; and here the mortuary returns afford information of considerable value. Although no doubt far from accurate, they undoubtedly contain general truths, as may be seen by the comparative prevalence or absence of the disease in contiguous districts, the marked increase in many of them during the same months, generally October or November,—a rise which is often coincident with the appearance of cases for the first time among the troops or in the jails.

Statement showing the Deaths registered from CHOLERA *in Bengal Proper during each month of* 1871.

DISTRICTS.	Number of Cholera Deaths registered in each Month.											
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Augt.	Sept.	Oct.	Nov.	Dec.
Chittagong ...	9	6	3	13	6	...	1	1	2	...	1	51
Noakholly ...	4	2	5	75	67	5	...	...	...	...	2	32
Backergunge ...	13	3	19	52	74	27	1	1	5	4	8	81
Dacca ...	10	3	21	165	97	5	8	4	...	7	5	102
Tipperah ...	9	1	10	236	74	20	1	...	...	...	2	6
Cachar ...	...	...	...	2	1	16	15	6	2	...	2	...
Sylhet ...	1	1	...	1	12	4	5	...	14	...	1	...
Mymensingh ...	23	3	6	33	35	30	20	15	9	23	...	53
Gowalparah ...	6	...	...	22	94	92	209	131	24	158	130	363
Durrung ...	...	...	...	...	...	...	...	33	12	38	116	223
Nowgong ...	...	...	2	...	...	5	49	...	200	720	622	408
Seebsaugor ...	...	3	...	...	3	1	...	1	16	...	36	278
Kamroop ...	2	5	...	14	36	101	223	166	342	195	208	501
Luckimpore ...	...	...	...	...	...	...	...	...	...	...	...	...
Jynteah Hills ...	...	...	...	...	...	...	...	...	...	...	...	...
24-Pergunnahs ...	20	47	51	37	17	7	1	14	19	37	56	488
Howrah ...	16	27	11	16	4	5	6	21	63	44	60	120
Serampore & Hooghly	6	8	19	24	6	4	7	24	107	102	69	180
Burdwan ...	2	1	4	6	10	4	3	7	3	1	12	91
Moorshedabad ...	3	3	2	7	6	24	4	1	29	60	260	270
Kishnaghar ...	5	2	6	3	...	3	3	3	4	...	49	450
Jessore ...	2	3	16	60	73	6	1	7	...	7	466	1,265
Furreedpore ...	...	2	6	99	23	2	...	...	...	...	17	370
Pubna ...	11	6	19	30	8	...	...	6	15	14	77	270
Rungpore ...	7	5	8	262	242	26	13	...	5	2	21	112
Dinagepore ...	15	13	14	33	51	8	22	26	25	13	46	71
Bograh ...	1	...	1	27	36	11	...	...	9	80	56	135
Rajshahye ...	42	11	12	17	8	2	1	24	14	385	540	490
Malda ...	3	1	2	1	4	...	56	17	11	84	254	170
Pooree ...	...	2	...	...	...	2	1	...	3	...	...	1
Cuttack ...	22	9	15	9	16	9	2	2	1	5	9	25
Balasore ...	...	...	...	2	5	1	3	2	...	1	1	34
Midnapore ...	2	14	...	8	14	1	2	...	...	...	7	20
Bancoorah ...	4	19	8	4	1	...	...	...	...	1	1	...
Sooree ...	1	4	7	1	2	4	20	18	...	...	2	21
Rajmehal ...	...	...	2	1	...	2	1	1	1	...	...	...
Deoghur ...	1	4	13	13	14	1	6	1	9	13	23	8
Purulea ...	4	2	2	19	...	2	5	1	1	3	13	...
Hazareebaugh ...	...	4	3	5	23	2	22	...	1	...	1	...
Ranchee ...	4	1	4	7	1	7	43	33	11	6	...	3
Chybassa ...	...	1	2	...	1	1	...	...	...	...	...	...
Darjeeling ...	...	...	...	...	...	7	...	...	2	...	...	...
Julpigoree ...	2	...	1	2	11	8	3	2	...	5	...	7
Purneah ...	...	4	...	1	...	...	...	1	2	11	55	43
Monghyr ...	1	...	...	...	15	21	8	35	4	68	19	6
Bhaugulpore ...	...	1	2	...	...	...	...	13	127	171	106	...
Gya ...	1	1	2	31	32	249	103	116	62	29	10	2
Patna ...	1	2	8	15	101	61	14	17	25	17	42	30
Shahabad ...	2	1	...	5	120	194	19	9	30	119	42	91
Sarun ...	1	3	...	4	13	9	11	5	5	77	54	40
Tirhoot ...	2	...	...	...	11	49	22	1	...	...	...	...
Chumparun ...	5	1	1	3	4	...	3	4	1	7	1	...

Cholera in Calcutta less prevalent than in any former year, showed the same general rise and fall as in neighbouring districts.

41. The statistics of the town of Calcutta continued to show remarkable immunity from Cholera. In 1870, as was specially noticed in last Sanitary Report, the deaths due to this disease within the limits of the Municipality had amounted to only 1,563, or little more than one-half of the number which had occurred in the most favorable of the 25 years with which comparison could be made. In 1871 the results have been still more striking, for the deaths were only 800, or about one-half of what they had been in 1870. This remarkable diminution in the disease is attributed by the Health Officer to three principal causes—general sanitary improvements, the Pultah water which is now used by all classes of the population without distinction of class or creed, and to the excessive rains of the year which cleansed the native villages. It is well worthy of notice that while Cholera was in such abeyance in the town of Calcutta, its monthly rise and fall yet accorded in a singular manner with its rise and fall in the group of districts which more

immediately surround it, as shown by the mortuary statistics of the general population in the second division of the table in the preceding paragraph. There was a similar rise in the spring, and a similar increase of the disease in the later months of the year, as may be seen from the following Statement, in which the deaths from Cholera in Calcutta in each month of 1871 are entered:—

January	53	July	25
February	96	August	41
March	55	September	70
April	85	October	86
May	29	November	128
June	23	December	109

The increased activity of Cholera in the end of the year is further illustrated by the very severe outbreak among the Nepaulese coolies proceeding to join the columns of the Looshai Expeditionary Force, but these and other details connected with the history of the disease among the general population of Bengal I must leave to be recorded by the Sanitary Commissioner of the Province.

Outbreak in Her Majesty's 96th Regiment at Dinapore in November.

42. The cases in Her Majesty's 96th Regiment at Dinapore occurred in the month of November, partly at that station, and partly at Sonepore, where a wing was encamped on escort duty. A few days prior to the outbreak, some sudden attacks of Diarrhœa came under observation, but they were ascribed to indulgence in pork. The first man was seized with Cholera at Dinapore on the morning of the 11th November; on the 12th and 13th there was slight prevalence of Diarrhœa among the women and children, and on the 14th another man was seized; no more cases occurred then at Dinapore, but in the wing which proceeded to Sonepore on the 16th, two cases occurred on the 23rd; on the 24th there was a third, and on the 26th a fourth case. On the 14th December, after the return of the wing to the cantonment, a woman was attacked. In regard to the cause of this outbreak, the Medical Officers state that they can offer no satisfactory explanation. It was ascertained beyond doubt that Cholera had existed in a village in the vicinity of the rifle range, where the company in which the first cases occurred had been encamped within a few days of the date on which the disease appeared amongst them, but there is no evidence of any communication with infected persons. With regard to the atmospheric phenomena at the time, the Surgeon remarks:—"It was observed for a considerable period before the disease appeared that we experienced a great prevalence of easterly winds veering to all four points of the compass in the course of twenty-four hours, and a frequently clouded state of the sky with a very perceptible and marked variation in the temperature."

Simultaneous outbreak in the Patna Jail.

43. The outbreak among the prisoners in the Patna Jail, although not of any great severity, deserves notice from the fact that it occurred almost simultaneously with the appearance of the disease in the garrison at Dinapore, from which it is only a few miles distant. The first case occurred on the 9th November in the person of a prisoner who was suffering from Dysentery, and during this and the three following days 15 cases in all were admitted into hospital. The jail, which was much overcrowded at the time, was relieved of 200 of its inmates. River water was substituted for that drawn from the wells,—a change which had in former outbreaks been observed to be attended with excellent results; and other sanitary precautions were adopted. Of the 200 prisoners who were removed to the old Deegah Jail, three were attacked within an hour or two of their arrival there, but no other cases occurred among them.

Cholera in Oudh.

44. The general Statement already given in paragraph 38 shows that in Oudh Cholera was slightly more fatal in 1871 than it had been in 1870. The annexed particulars detail the months in which it was most severe and the districts which were chiefly affected. However imperfect these returns may be, and there is sufficient evidence to show that they are far from accurate, they indicate a prevalence of the disease over an area continuous with that of Behar and the eastern districts of the North-Western Provinces, which is undoubtedly correct; and they also display in many of them that remarkable increase in the later months of the year which has been already referred to.

Statement showing the Deaths from CHOLERA *registered in the different Districts of* OUDH *during each month of* 1871.

DISTRICTS.	Estimated population.*	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total Deaths.
		January.	February.	March	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Pertabgurh	936,053	...	....	...	...	6	25	14	57	80	420	548	179	1,329
Rae Bareilly	782,874	21	18	34	17	19	15	145	9	86	860	1,027	824	2,575
Sultanpore	930,023	92	22	19	44	50	31	25	93	84	643	2,400	2,201	5,704
Fyzabad	1,437,009	54	54	46	42	14	11	28	6	22	36	113	132	558
Barabunkee	875,376	...	...	...	...	8	6	25	176	488	1,598	1,805	506	4,612
Lucknow	970,625	...	...	1	1	4	1	...	...	...	52	486	318	858*
Oonao	724,949	...	...	...	...	...	...	...	...	...	...	27	184	211
Gondah	1,167,816	2	...	1	21	1	9	2	4	...	...	33	...	73
Baraich	774,437	...	...	...	...	...	1	...	...	...	...	...	...	1
Kheree	737,732	...	...	...	...	...	...	...	...	...	1	...	...	1
Seetapore	930,224	28	...	...	...	...	...	...	...	...	...	37	12	77
Hurdui	930,977	19	1	...	8	...	...	...	...	..	...	...	10	33

Out break in Lucknow city in November and December.

45. Into the particulars of Cholera in each district I shall not enter, but the outbreak in the city of Lucknow deserves attention in connection with the appearance of the disease among the garrison. The first known case among the native population occurred on the 10th October, but of the 651 deaths recorded, only four took place in that month; there were 420 in November and 227 in December. The disease was at its height on the 25th November. In all 1,181 cases were recorded, but many doubtless escaped observation. Dr. Bonavia, the Health Officer of the Town, is of opinion that the outbreak was intimately associated with the excessive damp due to the heavy rains. The great proportion of attacks which came under his notice commenced between midnight and 3 A. M. There was no evidence to show that the disease had spread by contagion. On the contrary, the fact that in only 41 instances did two cases occur in the same house is strongly opposed to the idea that the epidemic spread to any great extent through intercourse with the sick.

Outbreak in garrison of Lucknow

46. Table No. XXIII shows that among the men one case occurred in June, one in August, and 17 in November. In this last month also seven European women and seven children were attacked. From the nominal return it appears that the first case among the Europeans occurred in the cantonment on the 9th November, and 15 others followed at intervals between this date and the end of the month. Men, women, and children were all included in this number. All three classes also suffered in the Muchee Bhawun Fort which adjoins the city. Here the first case appeared on the 16th November, and between this and the 25th thirteen others had occurred. No complete report of this outbreak has been received.

Cholera in the North-Western Provinces.

47. In the North-Western Provinces in 1871 Cholera was less prevalent and fatal than it had been in any one of the previous six years in which mortuary registration has been in force. Between 1865 and 1871 the mortality from this cause varied from a maximum of 3·06 per 1,000 in 1869 to a minimum of 0·44 in 1870. In 1871 the ratio was only 0·11. Nowhere did the disease attain any great severity. Among the European Troops in the North-Western Provinces, it was confined to a very few individual cases at Allahabad and Cawnpore in the spring, and at Benares late in the year. The outbreak at Jounpore in September and October was coincident with heavy floods, which caused much destruction to the town and great distress to the people.

---

* Of which 651 occurred in the city.

Statement showing the Deaths from CHOLERA *registered in the different Districts of the North-Western Provinces during each Month of* 1871.

DISTRICTS.	Estimated Population.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Eastern Districts of the North-Western Provinces.														
Ghazeepore ...	1,332,403	...	1	1	59	29	22	12	15	39	38	28	14	258
Benares	793,277	2	9	28	270	108	57	17	78	10	21	18	42	660
Mirzapore ...	1,054,413	2	1	2	36	43	27	2	4	6	1	...	3	127
Azimghur ...	1,385,872	3	2	1	12	34	87	12	3	4	17	40	9	224
Jounpore ...	1,015,427	2	1	5	27	11	6	4	3	92	187	49	21	408
Goruckpore ...	1,983,816	1	7	1	3	15	9	15	...	2	1	...	7	61
Bustee ...	1,455,697	8	12	7	6	5	6	1	3	...	...	...	1	49
Allahabad ...	1,393,183	4	1	8	44	40	11	6	4	1	1	38	13	171
Futtepore ...	680,786	1	...	3	2	3	2	...	...	...	...	...	...	11
Cawnpore ...	1,188,862	1	...	2	8	114	39	5	1	3	...	2	1	176
Futegurh ...	915,943	...	2	1	2	8	6	2	3	7	5	...	2	38
Districts of the North-Western Provinces south of, or bordering on, the Jumna.														
Banda	724,372	...	1	...	1	..	29	2	2	...	...	...	...	35
Hameerpore ...	520,941	1	...	2	...	1	1	1	2	...	...	...	...	8
Jaloun	405,272	1	1	...	...	...	...	...	...	...	...	...	...	2
Etawah	626,444	1	1	...	4	1	...	3	2	5	1	...	2	20
Jhansie ...	......	...	...	...	...	...	...	...	...	...	...	...	...	...
Lulutpore ...	248,146	...	...	...	...	...	...	...	...	1	...	...	...	1
Districts of the North-Western Provinces lying west of the line of 80° east longitude.														
Bareilly	1,464,199	3	6	12	12	24	15	11	13	16	14	5	8	139
Budaon	889,810	6	7	7	13	11	5	7	10	17	13	5	4	105
Shahjehanpore ...	918,850	2	4	4	9	15	5	7	3	11	4	1	4	69
Moradabad ...	1,095,806	8	26	13	24	25	27	11	23	11	13	6	7	194
Etah	614,351	1	...	2	4	1	3	2	4	4	1	2	...	24
Mynpooree ...	700,220	...	1	1	1	6	1	...	1	...	1	1	1	14
Alyghur	925,538	3	...	3	5	9	5	10	12	4	4	...	6	61
Boolandshuhur ...	800,481	2	1	3	4	6	3	8	6	2	...	3	3	41
Agra	1,028,544	1	3	6	4	11	3	15	3	4	1	6	3	60
Muttra	800,321	3	3	2	5	5	7	5	2	5	3	3	...	43
Meerut	1,199,593	1	11	11	5	20	8	7	7	4	6	2	2	84
Mozuffer nagar ...	682,189	7	7	12	23	18	10	14	...	...	...	2	2	95
Saharunpore ...	866,483	6	5	16	14	19	15	14	13	16	19	12	15	164
Bijnour	690,975	5	6	10	20	30	12	3	7	4	3	5	3	108
Deyrah	102,831	...	...	...	...	1	2	...	...	...	...	...	...	3
Terai Pergunnahs ...	136,108	...	...	...	...	11	...	...	...	3	...	...	...	14
Kumaon ...	385,790	...	...	1	...	...	4	1	...	...	...	...	...	6
Ghurwal ...	......	...	...	...	...	...	...	...	...	...	...	...	...	...

Cholera in the Central Provinces.

48. The mortuary registration of the Central Provinces shows for Cholera almost a complete blank. Only 19 deaths from this cause were registered during the whole year throughout these Provinces, a remarkable contrast to nearly 60,000 deaths due to the disease in 1869. In 1870 there had been 107. The details of 1871 are shown in the annexed Statement, the accuracy of which, it is to be observed, is fully corroborated by the experience of both troops and prisoners in the Central Provinces for the year. Between the 23rd May and 2nd June five prisoners were attacked in the Nágpúr Jail, of whom 2 died. In the city 4 cases occurred between the 30th May and 4th June, of which 3 were fatal. The facts that these attacks were isolated cases appearing at a time when the Central Provinces were otherwise free from the disease, and that they were synchronous with the outbreak at Secundrabad, are of much interest.

Statement showing the Deaths from CHOLERA *registered in the different Districts of the Central Provinces during each month of* 1871.

DISTRICTS.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Raipur	...	...	...	...	...	...	...	...	...	...	...	...	...
Bilaspúr	...	...	...	...	...	...	...	...	...	...	...	...	...
Sambalpúr	...	...	...	1	...	...	...	...	...	...	...	...	1
Jabalpúr	...	...	...	...	...	...	...	...	...	...	...	...	...
Seoni	...	...	...	...	...	...	...	...	...	...	...	...	...
Mandla	...	...	...	...	...	...	...	...	...	...	...	...	...
Narsingpúr	...	...	...	...	...	...	...	...	...	...	...	...	...
Damoh	...	...	...	...	...	...	...	...	...	...	...	...	...
Sagar	...	...	...	...	...	...	...	...	...	...	...	...	...
Chindwarah	...	...	...	...	...	...	...	...	...	...	...	...	...
Baitul	...	...	...	...	...	...	...	...	...	...	...	...	...
Hoshangabad	...	...	...	...	...	...	...	...	...	...	...	5	5
Nimar	...	...	...	1	...	...	...	1	...	...	...	...	2
Bhandara	...	...	...	...	...	...	...	...	...	...	...	...	...
Nágpúr	...	...	...	...	2	3	...	...	...	...	...	2	7
Balaghat	...	...	...	...	...	...	...	...	...	...	...	...	...
Wardah	...	...	...	...	1	...	...	1*	...	...	...	...	2
Chanda	...	...	...	...	...	...	...	...	...	...	...	...	...
Sironcha	...	...	...	...	...	...	...	...	...	...	...	...	...
Burhanpúr	...	...	...	...	...	...	1	1	...	...	...	...	2

* It is doubtful whether this was a case of cholera.

Cholera in Berar.

49. In Berar Cholera was slightly more prevalent than it had been in the year previous, the mortality from this cause having equalled ·27 per 1,000 of the population in 1871 against ·23 in 1870. In West Berar there was a considerable number of cases compared with East Berar, which almost entirely escaped. The distribution of the disease is exhibited in the annexed Statement.

Statement showing the Deaths from CHOLERA *registered in the different Districts of Berar during each month of* 1871.

DISTRICTS.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Akola...	...	...	...	...	...	45	117	49	...	...	4	1	216
Buldana	...	...	...	...	...	...	58	21	125	77	17	14	312
Basim...	...	...	...	...	...	...	...	1	10	29	7	1	48
Umrawati	...	...*	...	2*	...	...	...	...	...	...	...	...	2
Elichpúr	...	...	...	...	...	...	...	...	...	...	...	...	...
Woon	2	1	...	...	...	...	...	...	...	...	...	...	3

* Considered doubtful by the Civil Surgeon of the District.

Cholera in Rajputana and Ajmere.

50. Dr. Moore's report for 1871 shows that over the large area comprehending Rajputana, Ajmere, and Mhairwarra, Cholera was nearly altogether absent; only a few isolated cases were recorded, and these occurred chiefly in the months of May and June. In this extensive tract of country Cholera was at a minimum.

Cholera in the Bombay Presidency.

51. Before considering the history of Cholera in the Panjáb, the main facts regarding the disease in the Bombay and Madras Presidencies may first be shortly stated. Regarding the former I have no information beyond that contained in the monthly returns from which the annexed general Statement has been prepared. It shows that Cholera was much more prevalent than it had been in the year previous. To this the town of Bombay was an exception; the remarkable immunity of the European Troops in this Presidency has already been referred to.

Statement showing the Deaths from CHOLERA *registered in the different Districts of the Bombay Presidency during each month of* 1871.

DISTRICTS.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Bombay	77	44	38	28	17	10	5	11	15	34	9	6	294
Tanna	133	70	22	...	...	...	...	99	29	10	16	...	379
Colaba	22	51	4	12	...	...	...	...	2	1	2	27	121
Surat	1	1	3	...	4	...	...	...	...	...	...	3	12
Ahmedabad	1	3	3	9	1	3	...	...	...	...	...	...	20
Broach	...	...	...	...	...	1	...	...	...	...	...	...	1
Punch Mehals	...	...	...	1	...	...	1	...	...	...	...	...	2
Kaira	...	2	1	7	7	3	1	...	...	...	...	...	21
Khandesh	1	1	...	4	197	329	377	239	96	20	32	44	1,340
Ahmednugger	...	...	...	...	14	22	76	110	187	221	19	9	658
Nasick	41	36	79	70	335	367	317	175	10	4	...	28	1,462
Sholapore	4	1	6	...	...	...	18	89	54	88	13	6	279
Sattara	1	3	...	...	...	...	...	18	38	63	6	2	131
Kuladghee	30	...	...	...	1	...	...	...	2	55	57	20	165
Belgaum	22	17	1	...	...	...	...	...	...	...	...	...	40
Dharwar...													
Canara													
Rutnagherry	10	4	16	15	17	68	208	257	54	7	5	1	662
Mhow Cantonment													
Poona	8	3	...	...	...	1	2	17	68	86	15	85	244
Kolhapore	...	...	...	...	...	...	...	...	...	...	...	24	24

Cholera in the Madras Presidency.

52. The annexed Statement of Deaths from Cholera in the Madras Presidency shows that the violence of the epidemic which caused so much mortality in 1870 had greatly diminished. The total deaths numbered 17,656 against 55,867 in the year previous. By the end of the year 1871, the Sanitary Commissioner remarks that "nearly the whole of the Presidency was free of Cholera."

Statement showing the Deaths from Cholera registered in the different Districts of the Madras Presidency during each Month of 1871.

DISTRICTS.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Ganjam	7	12	10	7	6	10	7	4	4	6	8	4	85
Vizagapatam ...	11	6	...	...	1	17	8	10	...	...	...	...	53
Godavery... ...	...	49	42	16	...	6	51	34	2	...	...	2	202
Kistna	64	34	35	88	120	140	235	162	77	22	60	88	1,125
Nellore	26	132	132	145	66	152	240	131	84	17	...	...	1,125
Madras	7	13	24	20	173	83	36	41	85	10	1	...	493
Chingleput ...	8	18	29	121	226	143	37	31	17	2	...	11	643
South Arcot ...	113	147	150	141	39	22	16	19	12	22	19	13	713
Trichinopoly ...	600	218	96	58	13	29	41	25	18	5	13	16	1,127
Tanjore	319	359	54	33	24	29	32	16	25	25	17	11	944
Madura	187	126	46	25	31	34	15	28	19	16	36	33	596
Tinnevelly ...	1,903	691	131	33	14	4	19	4	9	11	9	10	2,838
Kurnool ...	18	...	...	...	...	...	...	...	...	...	...	...	18
Cudapah ...	...	10	169	151	63	130	168	137	116	10	3	...	957
Bellary	...	...	7	2	...	...	11	10	...	...	8	38	71
North Arcot ...	218	345	281	90	29	34	198	189	171	76	102	411	2,144
Salem	437	457	181	407	52	241	121	20	...	2	56	181	2,155
Coimbatore ...	221	362	173	153	171	138	34	7	2	7	6	7	1,281
Neilgherries ...	...	...	3	...	1	1	...	...	...	...	...	...	5
South Canara ...	48	38	45	47	45	63	56	87	25	38	38	45	525
Malabar	225	99	22	22	13	2	5	1	...	...	5	3	397

Outbreak at Secunderabad.

53. As has been already stated, the European Troops in very few stations in Madras were attacked by Cholera. To this remark the 18th Hussars at the large station of Secunderabad, the military cantonment in the immediate vicinity of Hyderabad in the Deccan, is a striking exception. The particulars of this outbreak formed the subject of much careful enquiry, and I may here briefly recapitulate the facts as summarized in a letter on the subject which I addressed to the Government in October last, and in which I submitted, as requested, an opinion on the different theories which had been advanced to account for the sudden sickness.

The disease appeared early on the morning of the 25th May and rapidly increased. The number of cases which occurred daily within cantonments and in camp is shown in the annexed Statement :—

Days of the outbreak.	Date.	Place where quartered.		No. of attacks.	No. of deaths.	Remarks.
1st day ...	May 25th*	Cantonment, Secunderabad		35		* And up to 4 A. M. of 26th.
2nd „ ...	„ 26th	In camp at Nagarum.		13		
3rd „ ...	„ 27th	Do.	do.	15		
4th „ ...	„ 28th	Do.	do.	5		
5th „ ...	„ 29th	Do.	Chereali	10		
6th „ ...	„ 30th	Do.	do.	4		
7th „ ...	„ 31st	Do.	do.	2		
8th „ ...	June 1st	Do.	do.	...		
9th „ ...	„ 2nd	Do.	Kusrah	...		
10th „ ...	„ 3rd	Do.	do.	1		
		TOTAL ...		85	39	=45·88 per cent. of cases.

To account for this sudden and violent attack, four theories have been advanced :—1*st.*—That the disease was imported into cantonments by native travellers. 2*nd.*—That it was due to the pollution of the water-supply. 3*rd.*—That it was occasioned by unhealthy influences arising from the débris of some old native houses recently knocked down which had been strewn along the roads of cantonments. 4*th.*—That the disease was due to some atmospheric influence which found circumstances favorable to its development either in the conditions existing in that portion of the cantonment where the 18th Hussars were quartered or in the men of the regiment whose health had, it appears, been deteriorated by several years' residence in the station. In favor of the first of these views there is little or no evidence. A few cases of Cholera had certainly appeared among the native population before the Hussars were attacked, and of these cases three happened to be travellers. But there is nothing to show that these men had brought the Cholera, or that the cases which subsequently occurred were due to any communication with them. The facts of the epidemic, moreover, as it affected the Hussars, so far as they have been recorded, do not favor the idea of contagion. The disease appeared suddenly with great violence, many cases occurring almost simultaneously in different quarters. There is no single fact adduced to show that it spread from man to man, or that it multiplied from first cases as so many centres of infection ; on the contrary, on the very first day the outbreak was at its height, and it declined in a very marked manner when the regiment was removed from the locality in which it first appeared. That the phenomena are to be justly ascribed to any unusual or specific pollution of the water is equally unproved. The supply was, it appears, drawn from the same source as that which had been previously used by the Hussars. The same water, moreover, was drunk by others without any ill effects. The suggestion that the epidemic was due to the débris of native houses saturated with impurities is ingenious, but such a view of the case hardly deserves serious consideration. Impurities of any kind are favorable to the production of disease, but without very clear and strong evidence such a trivial cause could not be considered sufficient to produce an epidemic of Cholera. The fourth view which I have mentioned appears to be more consistent with the facts than any of the others. The occurrence of a violent thunderstorm almost at the same time as the Cholera disappeared favors this conclusion. But it is not my object to urge any merely theoretical opinions. Practically the lesson taught by this epidemic is the same as that which has been taught by every other epidemic—that the cause of Cholera is as yet shrouded in very impenetrable darkness, and that the best means of prevention are sanitary improvements. The lines occupied by the 18th Hussars at Secunderabad have, it appears, long had an evil reputation. The value of immediate movement from the infected locality is, I believe, shown in the experience of this epidemic. Under ordinary circumstances, the disease increases during the first three or four days and then declines. Had the regiment remained in their barracks, there is every reason to suppose that the 35 cases which occurred on the first day would have culminated in an outbreak much more terrible than that which actually occurred. The marked decline in the number of cases immediately attendant on going into camp is very satisfactory.

Cholera in the Punjab.

54. Of the general distribution of Cholera in the Punjab during 1871 no information has reached me beyond the details contained in the following Statement. Excepting the outbreak at Delhi in the month of November, to which reference will be made in the next paragraph, nowhere does the disease appear to have assumed an epidemic character. Indeed, it may reasonably be questioned whether many of the cases recorded in different districts from month to month were really true Cholera at all.

Statement showing the Deaths from Cholera registered in the different Districts of the Punjab during each Month of 1871.

DISTRICTS.	Estimated Population.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Goorgaon	690,522	...	...	1	6	8	1	3	...	2	...	1	2	24
Delhi	608,850	...	1	1	1	5	2	...	...	1	...	21	27	59
Rhotuck	536,995	...	1	1	1	2	...	...	...	...	..	...	2	7
Hissar	484,681	1	...	1	2	...	..	..	...	...		...	...	4
Sirsa	210,795	...	...	...	2	1	...	...	...	...	...	...	...	3
Kurnaul	610,927	...	1	1	4	2	4	2	...	1	...	1	...	16
Umballa	1,008,952	4	1	6	5	5	5	1	...	4	2	2	...	35
Simla	34,173	...	...	...	...	...	...	...	...	...	...	...	...	..
Jullundur	783,020	...	...	...	...	1	1	...	1	...	2	1	..	6
Loodiana	583,445	1	1	1	1	...	1	...	2	1	2	1	1	12
Hooshiarpore	938,890	...	1	...	2	...	1	1	1	3	...	...	...	9
Kangra	744,162	1	3	...	5	...	2	2	1	4	1	2	2	23
Goordaspore	906,126	4	1	3	4	3	1	1	3	...	2	1	1	24
Sealkote	994,458	...	...	...	...	1	1	1	1	...	..	2	1	7
Umritsur	832,750	1	2	2	1	1	2	2	...	...	3	1	2	17
Goojrat	616,347	1	..	1	4	1	9	3	...	...	2	2	5	28
Goojranwalla	550,576	...	...	1	1	5	...	2	...	...	...	...	...	9
Lahore	775,551	1	2	1	1	2	5	4	5	4	2	2	7	36
Ferozepore	533,416	...	...	...	1	...	...	...	...	...	...	...	...	1
Montgomery	359,437	...	...	...	...	1	...	...	..	...	...	...	..	1
Mooltan	459,780	...	...	...	...	...	...	...	...	...	...	...	...	
Mozuffurgurh	295,547	...	...	...	...	...	...	...	...	...	...	..	..	...
Dera Ghazee Khan	308,840	...	...	...	...	...	...	...	1	...	...	.	...	1
Dera Ismael Khan	394,864	...	..	...	..	...	2	...	...	...	...	...	...	2
Jhung	348,027	...	...	...	...	1	...	...	1	...	2	...	...	4
Shahpore	368,796	...	...	...	...	...	4	1	...	...	...	...	...	5
Jhelum	500,988	...	.	...	...	3	8	1	1	...	...	...	2	15
Huzara	367,218	2	...	1	2	4	1	1	3	...	...	...	...	14
Rawul Pindee	699,647	...	...	1	...	...	...	...	...	...	...	..	1	2
Peshawur	500,443	...	...	...	2	...	...	1	1	...	...	..	...	4
Kohat	145,419	...	...	...	1	...	...	...	...	...	...	..	...	1
Bunnoo	287,547	1	...	...	...	...	...	...	...	...	...	...	...	1

The outbreak at Delhi in November.

55. The outbreak at Delhi presents some points of special interest. The first case, so far as has been ascertained, occurred on the 13th November near the Sudder Bazar, and two others, which appear also to have been true cases of Cholera, took place about the same time, and in the same locality, close to a quarter inhabited by tanners. On the 19th of the same month one of these tanners died, and on the 26th a feast, as is usual, was given in honor of the occasion. At this feast the tanners of the quarter were present to the number of between four and five hundred, and the party was confined to the people of this caste. On the 28th several of them were seized with vomiting and purging and all the other symptoms of true Cholera. By noon of the 29th there had been 45 seizures among them and 11 deaths. By the 4th December the numbers attacked were 70, and of these 43 had died. On further investigation, it appeared that the food which had been partaken of at the feast, consisting of rice, dholl, sugar, and ghee, when cooked had been spread on the floor of the hut in which the man in whose honor the feast was given had died, and over which he had been sick and purged. The food, hot and steaming, had been separated from the mud-floor by only a mat, and on this it had been allowed to remain for hours before it was eaten. The facts were very carefully investigated, and they deserve to be recorded, although at the same time it is important that no hasty deductions be drawn from them. There was no evidence to show that the water had been contaminated with Cholera discharges, but the whole of the quarter concerned was in a very filthy condition. The outbreak assumed great importance from the fact that it occurred at the very time when the troops were beginning to assemble at the camp of exercise, but it proved to be of a very local character. After a short delay the force collected, and there was no appearance of Cholera among them.

Importance of studying all the facts in regard to epidemics of Cholera.

56. I have now briefly recorded all the principal facts regarding the history of Cholera over India in the past year. The information, although defective in many respects, is very complete compared with what has been available in any previous year. Accurate knowledge of the facts must form the first step to any sound conclusions, and in this respect the data which have been collected in 1871 may, I believe, be regarded as a valuable contribution to the history of the disease. The much-vexed questions of the cause of Cholera, or the manner in which it is spread, I shall not discuss ; but, in reviewing the statistics of its general distribution in 1871, it is impossible to ignore the fact that its prevalence has been confined to well-marked areas as shown in the map, and there is certainly no evidence to support the theory that these areas have been in any respect determined by the facilities of communication or in any degree influenced by human intercourse. Individual outbreaks, such as that at Delhi, deserve careful investigation in regard to the local conditions under which they occur, but it is equally necessary for any satisfactory conclusions that the general history of Cholera, and especially its history at other places at or about the same time, should also be taken into consideration. The facts regarding the outbreak at Delhi, for example, must be studied in connection with what was occurring almost simultaneously at the far distant places of Dinapore, Patna, and Lucknow.

The Cholera of 1871 in relation to the anticipations of June.

57. In last Annual Report, when writing of the current history of the Cholera of 1871, I mentioned that the occurrence of individual cases at certain places in the spring had given rise to the fear lest they might be the forerunners of an epidemic as the season advanced, and a memorandum by Dr. Bryden, dated the 27th June, was given explaining in detail the facts in relation to the experience of former years on which this conclusion was founded. Happily these fears were not realized, but the occurrence of the outbreaks in the end of the year, which have been already detailed, support the belief that a fresh Cholera, as was supposed, actually did invade the Upper Provinces in the spring of 1871. Of this there has been further evidence during the current year, but I shall not anticipate the history of 1872 beyond stating generally that Cholera continued very severe in the eastern districts of the North-Western Provinces and Oudh, and that it has also been widely spread through the Punjab as far as the frontier.

Importance of studying all the facts not only in India, but all over the world.

58. As there is every reason to believe that a new epidemic in the Upper Provinces commenced with 1871, although its decided manifestation in that year was confined to a comparatively limited area, I proposed to take the opportunity of stating very shortly all the main facts known regarding the history all over the world of the epidemic immediately previous, from its commencement up to the present time, when, if Dr. Bryden's views be correct, it must have little vitality remaining, but the difficulty of obtaining the required information has prevented my carrying out this intention. There can be no question, however, that for the complete study of Cholera, the history of epidemics must be considered, not only as they affect India, but every other country. The Cholera which to all appearance left its home in Bengal Proper in 1868 appears to have been the same which proved so fatal in the Upper and Central Provinces in 1869, which attacked Eastern Africa in the end of that year, and caused many deaths in Eastern Europe in 1870 and 1871. Both these facts, the epidemic at Zanzibar and the Cholera in Russia during the past two years, were anticipated by Dr. Bryden in a very remarkable manner. His further anticipation, that the epidemic, having had its commencement in 1868, and being thus fully four years old, is not likely to advance with any vigour further to the west, if realized, will tend strongly to confirm the general accuracy of the views which he has advanced, and will serve to show that they may be turned to much practical benefit. If the people of England, for example, could have been assured with any degree of confidence that, having escaped the epidemic in 1870 and 1871, they were safe from its further ravages, many anxious fears might have been allayed. The views which I have referred to require much further investigation before they can be accepted as correct, but the experience of the last few years tends greatly in their favor, and there is ample evidence to show that they deserve attentive study on the broad basis of all the facts.

Small-pox almost extinct among the troops.

59. Small-pox was so little prevalent among European Troops in 1871 that the special Table usually devoted to it has been omitted. In Bengal only 12 cases occurred, of which one proved fatal. In Madras three British Soldiers were attacked, all of whom recovered ; while in the Bombay Presidency there was not a single case among them. Excepting 1868, in which no death occurred from Small-pox in this Presidency, the Returns for Bengal are more favorable than they have been in any previous year. The statistics of women and children, of native troops and prisoners, all show the same remarkable immunity from the disease.

And singularly dormant among the general population.

60. The same fact, the remarkable dormancy of Small-pox throughout 1871, is illustrated by the statistics of the general population as summarized in the annexed Statement, although in some of the Provinces the disease was more prevalent than it had been in 1870. No information has been received from Bengal beyond the monthly deaths recorded in this Table, and these are no doubt much under the truth. In the northern districts of the North-Western Provinces there was considerable prevalence of Small-pox. The fact that in the hill tract of Kumaon and Gurhwal not a single death was ascribed to this cause during the entire year testifies to the continued excellence of the vaccine arrangements in these districts. In Oudh the mortality from Small-pox varied from 0·22 in Pertabghur District to 3·38 in the District of Barabunki. In the Central Provinces the deaths from this disease were lower than in any year since mortuary registration has been initiated, and equalled only 0·2 per 1,000, a striking contrast to 8·2 in 1869. During both 1870 and 1871 Small-pox has been singularly dormant in this part of the country. In illustration of this fact, the Sanitary Commissioner specially cites the case of the Saugor District, in which the deaths from Small-pox in 1869 equalled 10·8 per 1,000, but not a single death was attributed to the disease in either of the two following years. Similar remarks apply to Berar. In the Punjab, the deaths from Small-pox, which were registered in 1871, very nearly equalled the number recorded in 1870.

Statement showing the Deaths registered from Small-pox in the different Provinces during the year 1871.

PROVINCE.	Estimated Population under registration.	January	Feby.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total Deaths.	Ratio of deaths per 1,000.	Ratio for 1870.
Bengal	Not stated.	273	287	491	637	647	473	265	192	108	127	140	163	3,803	...	1323*
North-Western Provinces	29,588,653	1,061	1,005	2.254	6,642	10,117	7,837	4,363	2,010	1.171	534	550	905	38,449	1·29	·79
Punjab	17,481,189	2,138	2,561	3,355	4,234	4,724	3,382	1,574	693	416	321	616	1,520	25,534	1·46	1·55
Oudh	11,198,095	534	539	853	1,736	2,509	2,088	1,514	1,127	390	539	203	402	12,434	1·11	·99
Central Provinces .	7.266,373	68	49	102	182	232	238	143	144	41	59	65	112	1,435	·20	·32
Berar	2,184,945	34	39	44	42	58	53	64	41	26	31	73	96	601	·28	·64
British Burmah ...	2,101,058	89	183	246	300	150	125	98	45	36	15	21	17	1,325	·63	·60
Madras	24,555,046	1,957	1,888	2.000	1,877	1,428	1.436	1,598	1,544	1,554	1,709	1,838	1,994	20,823	0·84	·46
Bombay	14.266,062	436	509	859	1,378	1.526	1,214	721	517	448	411	515	887	9,421	·66	·32

* Total deaths registered from Small-pox from July to December 1870.

Fevers were much less prevalent than in 1870.

61. For the first time Fevers are shown in the Annual Tables as divided into four classes, Intermittent, Remittent, Continued, and Enteric. To the last variety special attention will be directed in a subsequent paragraph. Throughout the Bengal Presidency the admissions from the first three varieties — the malarial forms of Fever—aggregated 590 per 1,000,—a proportion much diminished from what it was in 1870. Table XXIV shows not only the comparative ratio of admissions for each group, but also for each station in all the Presidencies. In the Agra and Central India Group there was a maximum of 1,063 cases per 1,000. In Southern India the rate was only 115, considerably less than the ratio among men occupying the hill stations of Bengal. But these cannot properly be compared, as in most cases the disease had been contracted elsewhere. The very small proportion of cases of Fever occurring in Fort St. George, St. Thomas' Mount, and Trichinopoly is deserving of attention.

Fevers among the general population.

62. As the statistics of native troops and prisoners for 1871 are not yet complete, any particulars regarding the comparative prevalence of Fevers among them which call for notice will be deferred to the subsequent sections of this Report, which are specially devoted to these portions of the community. The records of the general population, however, may here be given. In Bengal Proper no comparison can be made between the results of 1871 and those of former years. In the North-Western Provinces, Fevers, as usual, account for the great mass of the deaths reported, and, taken by themselves, give a death-rate of 14·85 per 1,000, the highest ratio under this head recorded in any of the Provinces for 1871, and considerably higher than it was in 1870. In the Central Provinces the deaths from Fevers exactly equalled what they had been in the year previous, but the Sanitary Commissioner believes that this result is due, in some measure, to more perfect registration. In Berar there was a considerable diminution, and the same remark applies to the Punjab. The mortality from Fevers in each of the Provinces is shown in the annexed Statement:—

Statement showing the Deaths registered from Fevers in the different Provinces during the year 1871.

PROVINCE.	Estimated Population under registration.	Jany.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total Deaths.	Ratio of deaths per 1,000.	Ratio for 1870.
Bengal ...	Not stated.	14,638	11,504	10,620	11,690	10,968	10,756	12,241	13,319	14,642	18,209	23,261	27,510	179,358	...	83173*
N. W. Provinces ...	29,588,653	27.602	18,732	23,532	29,334	25,898	22,434	23,546	31,858	44,010	62,879	57,094	54,912	421,831	14·25	10·91
Punjab ...	17,481,189	21,430	16,450	15,839	16,614	17,032	15,290	14,281	16,434	20,858	19,166	19,069	21,085	213,548	12·21	15·74
Oudh	11,198,095	10,462	7,686	9,747	10,115	9,268	8,303	8,050	9,559	10,285	15,414	18,808	17,140	134,837	12·04	10·97
Central Provinces ...	7,260,373	6,613	5,373	6,009	6,859	5,900	5,417	5,532	7,114	7,956	9,574	9,223	9,112	84,682	11·6	11·6
Berar	2,184,945	1.688	1,434	1,515	1,841	1,346	1,064	1,101	1,696	1,859	1,567	1,451	1,563	18,125	8·30	10·53
British Burmah ...	2,101,058	1,377	1,238	1.193	1,164	1,188	1,626	1,576	1,615	1,634	1,554	1,577	1,695	17,467	8·31	9·88
Madras ...	24,555,046	20,210	15,462	15.459	14,471	13,788	13,764	15,606	15,621	15,506	15,690	19,378	17,514	192,469	7·83	6·26
Bombay ...	14,266,062	13,536	12514	14,335	13,832	12,381	12.585	13.093	14.290	13,997	15,126	16,399	16.562	168,650	11·82	9·34

* Total deaths from Fever registered from July to December 1870.

Enteric Fever. Importance only recently recognised.

63. The particulars regarding Enteric Fever among European Troops in India afford material for very interesting study. It is only very recently that the importance of this disease as a cause of mortality among British Soldiers in this country has been in any degree realized, and this more correct appreciation of the facts of late years is due in very great measure to the remarkable statistics which have been collected by Dr. Bryden. In my Annual Report for 1868 I pointed out that, of the total of 91 deaths from Fevers which occurred in that year, more than one-third were to be ascribed to the enteric or typhoid form of the disease. It appeared, moreover, that those attacked by it were almost exclusively young men generally in their first years of Indian service; that the affection was widely spread over the Presidency, cases having appeared in a number of stations far removed from one another, but that, as a rule, it chiefly prevailed in the hot season. In the Report for 1870, recurring to this subject, it was shown that the facts of that year in respect to Typhoid Fever were quite in accord with what had been previously observed. Of 153 deaths attributed to Fevers, 62 were believed to have been due to typhoid. They occurred not in one or two stations only, but very generally throughout the Presidency. In nearly every case those who died were young men new to the country, and the deaths, although by no means confined to the hot months, had been most numerous at that time of the year.

Enteric Fever in 1871 fatal at many stations.

64. In the statistics of 1871 Enteric Fever has for the first time been shown separately, and the Returns give results quite in accordance with previous experience. In the Bengal Presidency, out of 139 deaths ascribed to Fevers, 60, or nearly one-half, were due to typhoid. The admissions from this cause were 3·8, and the deaths 1·71 per 1,000. Nor were such results confined to Bengal. In Madras the admissions were 4·4, and the deaths 1·47. In Bombay they were 2·3 and 1·48. For the Army of India as a whole, the cases of Typhoid Fever equalled 3·6, and the deaths 1·60 per 1,000. These particulars are given in the Table No. XXV, which has been specially devoted to illustrate the geographical and seasonal distribution of the disease. The prevalence in the hot months is not so marked in the statistics of 1871 as it has been in previous years. The greater number of admissions still occurred from May to September, but January shows the highest number in any one month. This result was due to the large number of cases occurring at this time at Cannanore, and also, though to a much less extent, at Lucknow. The fact that the disease was confined to no particular locality, but that, on the other hand, it attacked men in nearly every station throughout India, is very clearly illustrated in the Table. In the hill stations the cases were very few.

Almost entirely confined to young soldiers.

65. That the disease is essentially a disease of young soldiers is shown by the fact that throughout India in 1871 all the deaths ascribed to it, except four, occurred among men under 30. Sixty-nine indeed occurred in men under 25 years of age. Unfortunately the death-rolls do not yet show the length of Indian service, but the age alone is sufficient to establish the fact that the great proportion of those attacked could have been but a short time in India. The importance of Typhoid Fever as a cause of mortality among young soldiers in this country is well illustrated by the large proportion of the deaths which are due to it in men under 20 years of age. Of 76 deaths which occurred among soldiers in 1871 at this very early period of life, 40, or more than one-half, were due to typhoid. That Enteric Fever, like other diseases, is favored by insanitary conditions cannot be questioned, but the experience of British Troops in India does not support the conclusion that it is an affection dependent for its propagation on poisoning of a specific fœcal character. That the disease may be spread in this manner, or that it may be otherwise communicated from the sick to the healthy, is not denied; but the general appearance of cases, often of individual cases, occurring at so many points over the immense continent of India far distant from one another, cannot be very easily explained by the theory regarding the mode of propagation of Typhoid Fever which is generally accepted.

Evidence that the disease was true typhoid.

66. But it may be doubted whether the disease to which these deaths have been due was really typhoid. On this point I would only observe that the details have been recorded exactly as entered in the Returns. The facts have been supplied by

the medical officers, and it is hardly credible that so many independent witnesses in all parts of India should have been mistaken in their diagnosis. But any doubt on this point may easily be set at rest by reading the description given of such cases in the weekly returns. It would be tedious to cite many illustrations, but the question of the identity of the disease is of so much importance that I shall quote the remarks made by one or two medical officers at widely distant stations :—

FEROZEPORE :—*17th February* 1871.—" A recruit who came in the draft which joined from England on the 24th ultimo died of enteric fever on the 13th instant. On admission he was suffering from diarrhœa; his tongue was dry and brownish, but he had none of the characteristic spots. He progressed favorably taking large quantities of fluid nourishment until the day before his death, when he got restless and complained of pain. Perforation of the bowel was diagnosed. Extensive peritonitis was found with about a pint of sero-purulent fluid in the abdomen. The solitary glands of the lower ileum and large intestine were ulcerated, and most of them had a whitish disorganised core in the middle of the ulcer. The point of perforation was not discovered."—*Surgeon Ross, Her Majesty's 39th Regiment.*

RAWULPINDEE :—*4th August* 1871.—" Within the last two days a case of continued fever has presented typhoid symptoms, and is in rather a critical state." August 11th.—" The case noted in last week's return as presenting typhoid symptoms has had his disease changed to enteric fever. The case proved fatal last night. Age 21 ; 13 days ill. Pneumonia of both lungs in the second stage was found, also ulceration of Peyer's patches in the lower part of ileum and congestion of the mucous membrane of the upper part of the small intestine."—*Assistant Surgeon Thomson, A. Brig., B. Battery, R. H. A.*

PESHAWUR :—*23rd June* 1871.—" One patient, whose disease appeared to be remittent fever, died. The *post-mortem* disclosed lesions of the Peyrian patches of glands in lower part of ileum ; the disease was therefore changed to enteric fever."—*Surgeon Macnamara, Her Majesty's 2-60th Regiment.*

NUSSEERABAD :—*8th September* 1871.—" One death occurred during the week. The man came to hospital with ordinary fever, but the type soon changed, and decided symptoms of enteric fever showed themselves. The case was a short one. At the *post-mortem* examination, enlargement of the glands in the small intestines was discovered ; some were ulcerated. Had the case been of longer duration, the diseased state of the intestines would have been doubtless more advanced (age 21 ; 2 years in India ; duration of disease 10 days)."—*Surgeon Major Auchinleck, Her Majesty's 1-8th Regiment.*

POONA :—*26th January* 1872.—" One case of diarrhœa was changed to enteric fever ; the case proved fatal (age 24 ; 22 days ill). The ileum was greatly congested throughout. Numerous ulcers were found, but none penetrating."—*Surgeon, Her Majesty's 56th Regiment.*

CANNANORE :—*27th January* 1872.—" The two fatal cases resulted from enteric fever. In the one there was perforation of the ileum, and in the other the gut was covered with ulcers and much thinned."—*Surgeon Sparrow, Her Majesty's 89th Regiment.*

Similar quotations might be made from the reports of medical officers from nearly every station in India, but the above will suffice to show the character of the evidence and the unhesitating testimony to the fact that the disease was true typhoid. There is good reason to conclude that the returns do not indicate all the cases which really occurred, and that not a few of the deaths ascribed to Remittent and Continued Fevers were really caused by Enteric Fever.

Apoplexy neither prevalent nor fatal.

67. Heat Apoplexy was neither prevalent nor fatal in 1871. In this Presidency the admissions equalled only 1·8, and the deaths 80,—a result more favorable than in any previous year. In Madras the ratios were 2·2 and ·55. In Bombay they were somewhat higher, 3·4 and 1·20. Of the total of 47 deaths due to this cause, 35 occurred in the five months, April to August. The number of cases was 125, so that 37·60 per cent. of those treated died,—a proportion considerably below the average.

Dysentery and Diarrhœa much below the average.

68. The admissions and deaths from Dysentery and Diarrhœa in the three Presidencies and in the Army as a whole were as follows :—

	DYSENTERY.		DIARRHŒA.	
	PER 1,000 OF AVERAGE STRENGTH.			
	Admissions.	Deaths.	Admissions.	Deaths.
Bengal Presidency	34	1·17	64	·12
Madras "	73	2·31	60	0
Bombay "	23	·92	59	·28
Army of India	39	1·34	62	·12

These results, so far as Bengal is concerned, are much more favorable than the average of previous years.

Delirium Tremens less prevalent than usual.

69. In this Presidency, during 1871, 129 cases of Delirium Tremens were treated, of which 9 were fatal, the admissions having equalled 3·7, and the deaths ·25. These ratios show a considerable improvement on former years. In Madras the admissions and deaths from this cause were more than double what they were in Bengal, and the Returns for Bombay also compare unfavorably with those of this Presidency.

Hepatitis gives a favorable return.

70. In Bengal the admissions from Hepatitis equalled 59, and the deaths 2·73 per 1,000. Compared with the other Presidencies, the results stand thus—

	Per 1,000 of Average Strength.	
	Admissions.	Deaths.
Bengal Army	59·7	2·73
Madras ,,	66·5	3·59
Bombay ,,	44·5	1·85
Army of India	58·1	2·73

Affections of the liver were thus most frequent and fatal in Madras, while Bombay shows the least prevalence and mortality from this cause. In Bengal the results are more favorable than they were in 1870, or than the average of the previous ten years.

Venereal Disease shows much the same ratio of admissions as in 1870.

71. The admissions from the different forms of Venereal Disease among the European Troops in the Bengal Presidency in 1871 have, I regret to say, undergone no diminution compared with the years immediately preceding it. In 1871 the ratio has been 208 per 1,000, which shows a small increase over 1870, when it was 202. These figures are by no means satisfactory, and it is much to be feared that even they do not represent the whole truth, for under the new nomenclature of diseases which has been in use for the last three years, cases of venereal affection are very apt to be lost sight of. In 1871 out of an average regimental strength of 35,071 men there were—

	Cases.
Of Primary Syphilis and local Venereal Sores	2,572
Gonorrhœa	3,371
Phymosis	23
Stricture	134
Warts	104
Orchitis, Gonorrhœal ...	119
or a total of	6,323

But it is to be noted that there were in addition 630 admissions into hospital from inflammation of the inguinal glands, a large number of which were no doubt of venereal origin, and there were, besides, 503 cases of orchitis, the etiology of which is not distinguished in the returns, but very many of them must have been traceable to the same general cause. If only the 6,323 cases given in the above Statement be taken into account, they give an admission rate of 180 per 1,000 compared with 172 in 1870, the equivalent of 5,817 cases out of a strength of 33,689 men as shown in the regimental table for that year. Of cases returned as "secondary syphilis" the admissions in 1871 were 849, equivalent to a ratio of 24 per 1,000, the same proportion as in the year previous.

Comparison with Home Stations under the Act.

72. In last Annual Sanitary Report I pointed out that the results of the working of the rules for the prevention of Venereal Disease among the troops, although far from satisfactory, did not compare unfavorably with the statistics of Home Stations under the Act. In 1869, the last year for which the Annual Report of the Army Medical Department has been received, the ratio of admissions from Venereal Disease at these selected stations was 169 : in Bengal it was 202 for that same year. But apparently the Home statistics include only the

two forms of this class of affections,—primary venereal sore and gonorrhœa; and in this respect the returns for this Presidency, which include all varieties of Venereal Disease which have been recognised, are unfavorably placed. If Primary Venereal Sores and Gonorrhœa alone are taken into account in both, then the comparison between Home Stations under the Act in 1869 with Bengal Stations in 1871 will stand thus:—

	Home Stations under the Act, 1869.	Bengal Stations, 1871.
Strength	32,355	35,071
Number of cases Primary Venereal Sore	1,972	2,572
Number of cases Gonorrhœa	3,513	3,371
Ratio per 1,000 Primary Venereal	61	73
Ratio per 1,000 Gonorrhœa	108	96
TOTAL	169	169

The ratio in the two cases, strange to say, is identical, although the proportions in which it is made up vary; primary syphilis gives 73 per 1,000 in Bengal as compared with 61 in England, and gonorrhœa 96 as compared with 108.

High ratios of cases at certain stations.

73. So far this comparison is encouraging, but there is no question that Venereal Disease might be immensely reduced if the measures for its prevention were more carefully superintended. An examination of the Returns show how much the proportion of admissions from this cause, including all its forms, has varied during the past year at different stations. Omitting small bodies of men and places which were not occupied throughout the entire year, the ratio fluctuates between a minimum of 99 per 1,000 at Barrackpore and a maximum of 500 at Cawnpore. The high admission rates of 546 at the small garrison at Umritsur, and of 311 during ten months at Nynee Tal, deserve notice. The difficulties of dealing with the former place are very great. No lock-hospital has been established, and in the immediate vicinity of such a large city it would be impossible to adopt preventive measures which should in any degree be suited to the case except at a great expenditure. Among such small bodies of men, moreover, results fluctuate in a very marked degree. I observe on reference to former years that the admission rate from venereal has never been so high among the garrison at Umritsur as it was in 1871.

Comparison of results in 1871 and 1870.

74. Taking the stations occupied during the whole 12 months there were only two—Barrackpore and Gwalior, in which the admissions were under 100 per 1,000; in twenty they were above 100 and under 200; in sixteen they were between 200 and 300; in six—Hazareebaugh, Dinapore, Benares, Chunar, Delhi, and Darjeeling—they ranged between 300 and 400; in two, as already stated, Cawnpore and Umritsur, they equalled or exceeded 500 per 1,000. Of the forty-four stations in which comparison may be properly made between the results of the two years, there are twenty-three in which there has been an increase, and twenty-one in which there has been a decrease, in the proportion of venereal cases during 1871, as compared with 1870.

Much of the disease due to places other than the stations indicated in the Returns.

75. In estimating the degree of success and the extent of the failure in many of these instances, regard must be had to the peculiar circumstances of the places, the vicinity of large cities and bazars, the constitution of regiments, and other factors which no doubt largely influence the result. It is also to be observed, as I have noted in previous reports, that although set down opposite each station the admissions from venereal affections are not altogether due in every instance to the place itself or to any failure of the rules within its limits. No doubt a great proportion of disease is contracted on the march, where no preventive measures can well be taken. A march is always a fertile cause of venereal for some time after a regiment reaches its new station, but it would be impossible from the weekly returns which reach this office to eliminate all such cases and to confine the statistics to infection which was due to the station itself. Much valuable information of

this kind might be incorporated by medical officers in charge of lock-hospitals in their annual reports, and some of them have already furnished details of this nature, which show results much more favorable to the working of the rules in their particular cantonments than are displayed in the Tables.

Venereal Disease in the Madras and Bombay Presidencies in 1871.

76. The statistics of European Troops both in the Madras and Bombay Presidencies in 1871 are somewhat more satisfactory than those for Bengal. In the former the admissions from all forms of venereal affections equalled 180 and in the latter 174. For the army of India as a whole the ratio stands at 196,—the highest proportion of admissions into hospital caused by any one disease except Intermittent Fever.

Venereal Disease as a cause of inefficiency in the Army.

77. Enough has already been said to show how fertile a cause of admissions into hospital venereal affections still were in 1871. I have shown that the ratio under this head comes next to that from Intermittent Fever, and these two causes alone make up a large proportion of the sickness of the army. But the great mass of cases of Fever yields readily to treatment, and the man is able soon to return to duty. On the other hand, with Venereal Diseases it is very different: the ailments are often obstinate, and the man is many days in hospital. It is not possible to show with perfect accuracy the exact amount of inefficiency due to venereal affections, but taking the numbers of sick remaining on the last day of each month as the basis of calculation, it appears that while the average number of men in hospital throughout the year was 1,987, 460 of these were under treatment each day for fevers and 458 for venereal.

The rules are sufficient if properly administered, and have produced excellent results in some stations.

78. It is essential for the proper working of the measures for the prevention of this class of diseases that the authorities in each cantonment, and especially the Cantonment Committee, should be fully impressed with a right sense of the prevalence of these affections, and the large place they occupy in the diseases under which the British Soldier labors. As regards the rules, I have no further suggestions to offer than those which were submitted in last year's review, but much remains to be done so far as concerns the proper and successful administration of them. Although the results of the working of the rules for the prevention of Venereal Disease have by no means been so satisfactory as are desired, the experience of certain stations where they have been carefully administered during a series of years, such as Roorkee, Meerut, and Mooltan, show beyond all question that with proper management a very decided impression may be made on the prevalence of Venereal Diseases among the European Troops. The sufficiency of the orders of the Government which were last issued, moreover, ought not to be judged by the results of 1871. It is essential that these instructions, which issued late in the year, should receive the most vigilant attention on the part of all the authorities concerned, and more particularly of the Cantonment Committee.

Deaths according to age.

79. The proportion of deaths at different quinquennial periods of life shows that the reduced mortality of 1871 was chiefly attained in the older periods. Among the lads under 20 there was little change. This may be seen from the following Statement in which the results of the two years are compared, and particulars at the same time are given for the other Presidencies and for the Army as a whole:—

	Died per 1,000 of Strength.			
	Under 20.	20–24.	25–29.	30 and upwards.
Army of Bengal, 1870	8·84	16·86	17·83	30·97
" " " 1871	8·31	11·62	14·60	27·84
" " Madras "	3·57	12·20	15·60	33·75
" " Bombay "	5·47	9·67	11·44	24·08
" " India "	6·62	11·30	14·25	28·44

The high death-rate among the young men in Bengal is entirely accounted for by Typhoid Fever, which proved fatal in this Presidency to 4·98 per 1,000; whereas in Madras the ratio of loss from this disease at this period of life was only 89·, and in Bombay 1·37. In the next quinquennial period, the death-rate under this head was lower in Bengal than in either of the other Presidencies.

Composition of the army according to age.

80. The composition of the army in relation to age is thus shown, as it stood at the beginning of 1871—

	Under 20	20-24.	25-29.	30-34.	35-39.	40 and upwards.	TOTAL.
Army of Bengal	3,010	10,582	10,070	8,205	3,000	433	35,300
„ „ Madras	1,121	2,787	2,884	2,719	996	196	10,703
„ „ Bombay	1,460	3,722	2,622	1,998	942	217	10,961
„ „ India	5,591	17,091	15,576	12,922	4,938	846	56,964

The small proportion of men in the older periods of life is remarkable. Throughout the entire army of India there were only 846 men of 40 and upwards.

Misapprehension as to the facts regarding the relation of age to the losses of the Army in India.

81. In last Annual Report, when commenting on a very interesting memorandum by Dr. Bryden on the relation of age to mortality, and also on the effect of climatic influences on bodies of men during their first years in India, copy of which was appended to that report, I drew attention to the very high ratios both of sickness and mortality, and also to the heavy invaliding among British soldiers during their first Indian experience. This very important question will be further illustrated by Dr. Bryden, and I shall not now offer any additional observations on the relation of age or Indian service to the vital statistics of the army in this country beyond noticing a misapprehension which has taken place with regard to the data presented in last report. The fact that the death-rate at the early periods of life has been low has been adduced as an argument to prove that the objections to sending men under 20 to India are founded on a mistaken idea of the facts. But no such inference would be justified by the statistics. Doubtless, the mortality among the young men is low,—very low compared with that of men of more mature age, for on them the heavy mortality falls; but that the mortality, and especially the invaliding, have been raised by the number of young and undeveloped youths who were, until very lately, sent to India, cannot be doubted. On this point I observed:—"As regards mortality, Dr. Bryden has shown very clearly that the European Soldier in India ages quickly, and that the losses both by death and invaliding rise rapidly, and become extremely heavy at those periods of life when men are generally supposed to be in their prime. But, apart from this truth, his statistics also demonstrate the very high ratio of loss from both these causes which have occurred among very young men." Moreover, it is to be remembered that much of the evil arising from sending weakly boys as recruits cannot be estimated by statistics. Many of those who came to India could hardly be called able-bodied men fit to take the field, and it is quite impossible to say how much of the loss which falls on the old soldier in India is due to the undeveloped frame with which he landed in the country. Recent orders have remedied this evil, and the question calls for no remark at present except in so far as it is desirable to correct the impression which appears to have prevailed in some quarters that these orders have been based on an imperfect knowledge of the facts.

Number of married and unmarried soldiers in the three Presidencies.

82. The annexed Statement shows the proportion of married and unmarried soldiers as it stood on the 1st May 1871. The results are almost identical with those of the year previous, and illustrate the fact that the number of married men among the rank and file is considerably under that allowed by regulation.

Abstract of married and unmarried European Non-Commissioned Officers and Soldiers serving in the three Presidencies on 1st May 1871.

Corps.	Staff Sergeants.				Sergeants.				Rank and File.				Total of all Grades.			Remarks.
	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Married.	Unmarried.	Percentage of married to actual strength.	
Engineers.																
Bengal	2	2	1	66·00	25	9	24	27·27	48	5	4	55·55	16	20	35·55	
Madras	2	2	...	100·	20	16	4	80·	40	3	6	33·33	21	10	67·74	
Bombay	2	2	...	100·	4	...	1	...	8	9	...	100	11	1	91·66	
Total ...	6	6	1	85·71	49	25	29	46·29	96	17	10	62·96	48	40	54·54	
Artillery.																
Bengal	152	99	44	69·23	272	141	142	49·82	5,741	466	5,201	8·22	706	5,387	11·58	
Madras	66	58	9	86·56	110	76	34	69·09	2,341	335	1,922	14·84	469	1,965	19·26	
Bombay	63	45	13	77·58	96	66	35	65·34	2,064	222	1,891	10·5	333	1,939	14·65	
Total ...	281	202	66	75·37	478	283	211	57·28	10,146	1,023	9,014	10·19	1,508	9,291	13·96	
Cavalry.																
Bengal	50	28	18	60·86	155	57	67	45·96	2,075	176	1,868	8·61	261	1,953	11·78	
Madras	20	13	9	59·09	50	26	27	49·05	840	100	745	11·83	139	781	15·10	
Bombay	24	20	4	83·33	60	40	20	66·66	829	88	810	9·79	148	834	15·07	
Total ...	94	61	31	66·30	265	123	114	51·89	3,744	364	3,423	9·61	548	3,568	13·31	
Infantry.																
Bengal	288	159	89	64·11	1,280	541	648	45·50	26,796	2,073	24,107	7·91	2,773	24,844	10·04	
Madras	72	50	25	66·66	369	169	193	46·68	7,524	624	6,743	8·47	843	6,961	10·80	
Bombay	90	62	22	73·80	360	180	157	53·41	7,524	559	6,836	7·55	801	7,015	10·24	
Total ...	450	271	136	66·58	2,009	890	998	47·14	41,844	3,256	37,686	7·95	4,417	38 820	10·21	
Grand Total of all Arms	831	540	234	69·76	2,801	1,321	1,352	49·42	55,830	4,600	50,133	8·50	6,521	51,719	11·19	

Comparative sickness and mortality among the married and unmarried for the five years 1867—1871.

83. The details of the sickness and mortality among the married and unmarried soldiers at different ages and from different causes are given in the following Statements. That for Bengal shows the results of 1871 as compared with those of the four preceding years. As regards Madras and Bengal the particulars relate only to 1871.

Summary of the Returns of 1871 *from the Bengal Presidency for Married and Unmarried Soldiers, showing also the Parallel Statements for* 1870, 1869, 1868, *and* 1867.

(AN APPROXIMATE STATEMENT).

						DETAILS OF STRENGTH ACCORDING TO AGE.						DETAILS OF DEATHS ACCORDING TO AGE.						TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.		CAUSES OF ADMISSIONS AND DEATHS.																
	Year.	Average Strength.	Total number of days spent in Hospital during the year.	Average number of days spent in Hospital by each man.	Admission rate of the year per cent. of Strength.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 20.	30 to 34.	35 to 39.	40 and upwards.			Cholera.	Fevers.	Apoplexy.	Drunkenness.	Delirium Tremens.	Dysentery and Diarrhœa.	Hepatitis.	Venereal Affections.	Heart Disease.	Phthisis Pulmonalis.	Disease of Lungs.	Ophthalmia.	Scurvy.	Accidents and Injuries.	Suicide.	All other Causes.
Total for Married Men ...	1871	3,620	32,541	9	76	...	43	827	1,697	890	163	...	2	10	33	27	7	Admitted	2,754	4	1,083	8	13	29	195	141	21	31	38	159	154	...	160	...	718
																		Died	79	2	10	7	...	4	4	15	...	11	8	4	...	...	3	1	10
	1870	3,440	30,482	8·9	81	...	76	830	1,435	931	168	...	...	9	29	39	9	Admitted	2,776	6	1,290	9	28	33	181	118	11	29	29	126	150	...	137	1	628
																		Died	86	3	10	7	...	2	7	10	...	6	11	2	...	...	2	2	24
	1869	3,450	32,596	9·5	89	...	115	1,002	1,470	732	131	...	3	26	75	51	11	Admitted	3,078	57	1,337	38	22	46	255	114	6	33	29	112	144	...	181	...	704
																		Died	166	49	15	21	1	8	12	19	...	9	9	5	...	...	1	4	18
	1868	3,351	28,825	8	78	...	148	937	1,418	662	186	...	1	18	40	20	9	Admitted	2,613	15	823	40	106	30	202	145	15	16	17	77	158	...	181	1	787
																		Died	88	9	3	21	1	8	8	10	...	6	7	2	...	...	1	1	11
	1867	3,012	27,146	9	88	1	128	835	1,331	582	135	...	1	31	40	26	12	Admitted	2,642	64	804	19	83	19	291	97	12	32	28	107	182	4	170	1	729
																		Died	110	52	6	9	1	4	6	9	...	3	8	3	...	...	2	2	11
Total for Unmarried Men ...	1871	32,178	684,155	21·3	153	2,664	10,734	9,078	6,721	2,619	362	29	118	132	153	82	16	Admitted	49,182	37	19,490	37	147	108	3,169	1,918	6,733	550	266	1,915	551	7	2,866	4	11,395
																		Died	530	23	126	19	3	3	28	64	2	46	43	39	...	...	25	17	92
	1870	31,169	713,128	22·9	175	2,072	10,083	9,143	7,137	2,325	409	20	163	177	195	69	34	Admitted	54,535	47	26,389	71	199	154	3,153	1,776	6,426	479	304	1,660	576	23	2,702	1	10,576
																		Died	648	19	131	37	2	6	56	107	7	46	36	56	...	...	24	13	108
	1869	30,728	675,810	22	178	2,188	8,915	9,787	6,992	2,514	332	38	370	405	331	122	35	Admitted	54,694	780	23,784	203	212	182	4,697	1,650	6,341	410	339	1,418	614	25	2,828	13	11,198
																		Died	1,301	484	169	94	...	10	113	125	4	42	62	28	...	...	23	16	131
	1868	30,336	561,707	18·5	139	1,762	9,176	10,843	6,241	1,949	365	27	140	188	147	56	10	Admitted	42,158	57	13,830	221	638	107	3,443	1,465	6,064	321	223	1,395	628	23	3,021	4	10,718
																		Died	568	41	99	70	6	3	57	87	4	29	41	24	...	3	17	14	73
	1867	30,862	567,739	18·4	138	1,293	6,998	13,815	6,310	2,131	315	25	212	327	218	78	8	Admitted	42,634	551	13,670	122	572	104	3,952	1,702	5,227	351	204	1,367	738	24	2,952	11	11,149
																		Died	868	370	77	47	8	10	82	76	2	30	36	29	...	1	21	10	69

Summary of the Returns of 1871 *from the Madras and Bombay Presidencies for Married and Unmarried Soldiers.*

	Year.	Average Strength.	Total number of days spent in Hospital during the year.	Average number of days spent in Hospital by each man.	Admission rate of the year per cent. of Strength.	Details of Strength according to Age.						Details of Deaths according to Age.						Total Admissions and Deaths during the Year.		Causes of Admissions and Deaths.															
						Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.			Cholera.	Fevers.	Apoplexy.	Drunkenness.	Delirium Tremens.	Dysentery and Diarrhœa.	Hepatitis.	Venereal Affections.	Heart Disease.	Phthisis Pulmonalis.	Disease of Lungs.	Ophthalmia.	Scurvy.	Accidents and Injuries.	Suicide.	All other Causes.
Total for Married Men ...		*1,355	12,000	9	68	...	14	243	645	377	76	...	...	3	14	15	5	Admitted	930	5	126	2	53	20	115	60	7	28	21	29	42	...	84	...	338
																		Died	37	2	2	3	...	4	5	6	1	7	2	...	...	...	2	2	1
Madras	1871																																		
Total for Unmarried Men ...		8,927	195,696	21·9	125	1,038	2,772	2,403	1,514	771	129	6	29	40	63	22	3	Admitted	11,203	71	1,296	16	263	75	1,282	619	1,643	157	103	357	112	2	1,081	2	4,124
																		Died	163	34	24	5	...	1	16	30	...	15	8	6	...	...	8	6	10
Total for Married Men ...		*1,259	9,953	7·9	87	2	31	248	519	364	95	...	...	3	5	10	...	Admitted	1,095	...	482	2	8	14	79	36	8	8	8	43	42	1	88	...	276
																		Died	18	...	4	...	...	2	...	3	...	3	1	2	...	...	..	...	3
Bombay	1871																																		
Total for Unmarried Men ...		9,785	198,455	20	154	1,405	3,677	2,483	1,514	578	128	7	37	32	29	21	4	Admitted	15,072	1	7,205	18	33	55	795	426	1,901	139	83	373	206	1	845	1	3,090
																		Died	130	...	22	9	1	3	12	18	...	9	13	2	...	...	7	6	28

* Excluding the 79th Regiment, the Return for which has not been received.

Dr. Bryden's memorandum on these five years' statistics.

84. The facts regarding the married and unmarried men of the European armies in the three Presidencies are discussed by Dr. Bryden in the following very interesting memorandum:—

The Statements which follow, in which the sickness and mortality of the married as distinguished from the unmarried men of the army for the five years 1867-71 are contrasted, show great consistency from year to year. The details differ in some respects from those given in the more accurate general statistical tables; but the totals are approximate, and the ratios may be accepted as illustrating very clearly the conditions determining an excess or diminution of disease in the two classes.

As noticed on former occasions, the results shown in the return for married and unmarried men must be read in connexion with those shown in the Age Table for the year, since the ratios are, to a great extent, representative only of the fact, that the married men are, as a body, of an age which contrasts with that of the unmarried men taken in the aggregate:

Percentage of Married and Unmarried men below and above 30 years of age.

	MARRIED.					UNMARRIED.				
	1867.	1868.	1869.	1870.	1871.	1867.	1868.	1869.	1870.	1871.
Above 30 years	68	66	68	74	76	28	28	32	32	30
Below 30 „	32	34	32	26	24	72	72	68	68	70
TOTAL ...	100	100	100	100	100	100	100	100	100	100

In the Age Table, it is shown that the ratio of mortality for men above 30 is consistently double of that for men below 30:

Results as regards the Death-rate shown in the Age Table for men below and above 30.

EXCLUDING CHOLERA.

	BELOW 30.			ABOVE 30.		
	Strength.	Deaths.	Ratio per 1,000.	Strength.	Deaths.	Ratio per 1,000.
1867	25,790	318	12·33	10,857	285	26·25
1868	23,487	332	14·14	10,122	246	24·30
1869	24,511	482	19·66	11,445	435	38·01
1870	22,137	353	15·95	11,365	345	30·36
1871	23,662	270	11·41	11,638	314	26·98

Hence, married men (the older class), give a death-rate in excess of that of the younger class, the unmarried men:

Death-rate in the Married and Unmarried contrasted.

	UNMARRIED.			MARRIED.		
	Strength.	Deaths.	Ratio per 1,000.	Strength.	Deaths.	Ratio per 1,000.
1867	30,862	498	16·10	3,012	111	19·26
1868	30,336	527	17·37	3.351	79	23·58
1869	30,728	817*	26·60	3,450	117	33·90
1870	31,169	629	20·18	3,440	83	24·13
1871	32,178	530	16·47	3,620	79	21·82

The diseases peculiar to old soldiers predominate in the case of the married, and those to which the young are more especially liable in the case of the unmarried. In the statistics of 1871, the excessive death-rates of the married men for Hepatitis, Heart Disease, Apoplexy, and Delirium Tremens are to be noted. The death-rate for Fever, which is always in excess in the unmarried, is indicative chiefly of the great liability of the young soldiers to Enteric Fever.

Death-rates of the two classes for the five years contrasted.

Causes of Deaths.	Married.					Unmarried.				
	1871.	1870.	1869.	1868.	1867.	1871.	1870.	1869.	1868.	1867.
Cholera	·55	·87	14·20	2·68	17·26	·71	·61	15·75	1·35	11·99
Fevers	2·76	2·91	4·35	·88	1·99	3·92	4·20	5·50	3·26	2·50
Heat Apoplexy	1·93	2·03	6·09	6·27	2·99	·59	1·19	3·06	2·31	1·52
Drunkenness	1·11	·58	2·60	·30	·33	·18	·26	·33	·20	·26
Delirium Tremens				2·39	1·33				·10	·32
Dysentery	1·11	2·03	3·48	2·39	1·99	·87	1·80	3·68	1·88	2·66
Hepatitis	4·14	2·91	5·51	2·99	1·00	1·99	3·43	4·07	2·87	2·46
Heart Diseases	3·04	1·75	2·60	1·79	1·00	1·43	1·47	1·37	·96	·96
Phthisis Pulmonalis	2·21	3·20	2·60	2·09	2·66	1·34	1·16	2·02	1·35	1·17
Lung Diseases	1·11	·58	1·45	·60	1·00	1·21	1·80	·91	·79	·94
Accident	·83	·58	·29	·30	·66	·78	·77	·75	·56	·68
Suicide	·27	·58	1·16	·30	·66	·53	·42	·52	·46	·32
All other Causes	2·76	6·98	3·77	3·28	3·65	2·92	3·68	4·39	2·63	2·34
Died per 1,000	21·82	25·00	48·10	26·26	36·52	16·47	20·79	42·35	18·72	28·09
Exclusive of Cholera	21·27	24·13	33·90	23·58	19·26	15·76	20·18	26·60	17·37	16·10

The mortality above and below 30 in the married and unmarried was in the following proportion:—

Percentage of Deaths of Married and Unmarried men below and above 30 years of age.

	Married.					Unmarried				
	1867.	1868.	1869.	1870.	1871.	1867	1868.	1869.	1870.	1871.
Above 30 years	70·91	78·41	82·53	89·54	84·81	35·02	37·50	37·51	44·44	47·36
Below 30 "	29·09	21·59	17·47	10·46	15·19	64·98	62·50	62·49	55·56	52·64
Total ...	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

Comparison of the death-rates of the two classes at the same ages gives the following results:—

Death-rate of 1871, *and of the four preceding years in the two classes at the same ages contrasted.*

DEATH-RATE OF 1871, CHOLERA DEATHS INCLUDED.

Ages.	Married.			Unmarried.		
	Strength.	Deaths.	Ratio per 1,000.	Strength.	Deaths.	Ratio per 1,000.
Under 20 years ...	...	...	13·79	2,664	29	12·41
20 to 24 " ...	43	2		10,734	118	
25 to 29 " ...	827	10		9,078	132	
30 to 34 " ...	1,697	33	19·45	6,721	153	22·77
35 to 39 " ...	890	27	32·29	2,619	82	32·87
40 and upwards ...	163	7		362	16	

Average of the Five Years 1867-71.

Married men below	30	20·23.	Married men above	30	36·02
Unmarried " "	30	21·84.	Unmarried " "	30	33·05

For men below 30, the results are slightly in favour of the married men, who are withdrawn in some measure from causes of mortality which operate against the unmarried soldier; but, for the married men above 30, the death-rate is consistently higher than that of the unmarried, the excess being due probably to the greater age of many of the married class, who have been detained in India by the fact of having been married.

Admission rates of the two classes contrasted.

Causes of Admissions.	Married.					Unmarried.				
	1871.	1870.	1869.	1868.	1867.	1871.	1870.	1869.	1868.	1867.
Cholera	·11	·17	1·65	·45	2·12	·11	·15	2·54	·19	1·79
Fever	29·92	37·50	38·75	24·56	26·69	60·54	84·66	77·40	45·59	44·29
Heat Apoplexy ...	·22	·26	1·10	1·19	·63	·11	·23	·66	·73	·40
Drunkenness * ...	*	*	·64	3·17	2·75	*	*	·69	2·10	1·85
Delirium Tremens ...	·80	·96	1·33	·89	·63	·33	·50	·59	·35	·34
Dysentery and Diarrhœa	5·89	5·26	7·39	6·03	9·66	9·85	10·12	15·29	11·35	12·80
Hepatitis	3·90	3·43	3·30	4·33	3·22	5·96	5·70	5·37	4·83	5·52
Venereal Diseases ...	·58	·32	·18	·45	·46	20·92	20·62	20·64	19·99	16·94
Heart Disease ...	·86	·85	·96	·48	1·06	1·74	1·53	1·33	1·06	1·14
Phthisis Pulmonalis ...	1·05	·85	·84	·51	·93	·83	·97	1·10	·73	·66
Diseases of Lungs ...	4·39	3·66	3·25	2·30	3·55	5·95	5·32	4·62	4·60	4·23
Ophthalmia ...	4·25	4·36	4·17	4·71	6·04	1·71	1·85	2·00	2·07	2·38
Accidents	4·42	3·98	5·25	5·43	5·64	8·91	8·67	9·20	9·97	9·56
All other Causes ...	20·19	19·10	20·41	23·48	24·36	35·88	34·65	36·56	35·41	36·25
Admitted per cent. of Strength	76·08	80·70	89·22	77·98	87·68	152·84	174·97	177·99	138·97	138·15

---

* Not recognized under the recently introduced nomenclature as a cause of admission into hospital.

As in the return for 1869 and 1870, the admission-rate of 1871 is double in the case of the unmarried. And this proportion is maintained as regards nearly all diseases, if Apoplexy, Delirium Tremens, and Ophthalmia be excepted. Venereal Diseases give, in the unmarried, a ratio of 20·92, which contrasts with a ratio of ·58 in the married.

Number of Married and Unmarried men daily sick, contrasted.

Years.	Married Strength	Married Number of days spent in hospital.	Married Number of days per man.	Unmarried. Strength.	Unmarried. Number of days spent in hospital.	Unmarried. Number of days per man.
1867	3,012	27,146	9	30,862	567,739	18·4
1868	3,351	26,825	8	30,336	561,707	18.5
1869	3,450	32,596	9·5	30,728	675,810	22·0
1870	3,440	30,482	8·9	31,169	713,128	22·9
1871	3,620	32,541	9	32,178	684,185	21·3

In 1871, the married men spent each nine days in hospital, while the unmarried passed on the average upwards of twenty-one days in hospital.

The returns for the Armies of Madras and Bombay for 1871 give results which are very similar; as an exception, it is to be noted, that in the Bombay Army the death-rate of the older class, the married men, is only 1 per 1,000 in excess of that of the unmarried men:

Statistics of Married and Unmarried men in the Armies of Madras and Bombay.

	Bengal.	Madras.	Bombay.
Married Men.			
Strength	3,620	1,355	1,259
Days spent in hospital	9	9	7·9
Admitted per cent. of Strength	76	68	87
Death-rate	21·82	27·31	14·30
„ excluding Cholera	21·27	25·83	14·30
Unmarried Men.			
Strength	32,178	8,927	9,785
Days sent in hospital	21·3	21·9	20·0
Admitted per cent. of Strength	153	125	154
Death-rate	16·47	18·26	13·29
„ excluding Cholera	15·76	14·45	13·29

Returns showing the extent of intemperate habits.

85. The Annual Returns designed to illustrate the extent of intemperance among British Troops, show that in the Army of Bengal, in 1871, there were 809 total abstainers, and in that of Bombay 318. No Return for Madras has yet been received. In Bengal 11,750 cases of drunkenness were reported during the year. In Bombay the number was 4,643. In the Cavalry Regiments, the cases varied from a minimum of 26 to a maximum of 187; in the Batteries of Artillery from 13 to 283, and in the Infantry from 115 in one Regiment to 717 in another.

Under the new nomenclature of diseases, as explained in last Report, the statistics of drunkenness as a direct cause of admission into hospital are unfortunately omitted, and such cases are now altogether lost sight of under the name of Fever, Dyspepsia, or some other ailment,—an arrangement which is greatly to be regretted.

Principles on which the invaliding for 1871 has been calculated.

86. In 1870, among the questions which I had the honor to submit to the Army Sanitary Commission, was one relating to the time at which the Invaliding Boards should assemble. I suggested that some change should be made, so as to ensure the selection of the men in this country at the most favorable time, and their arrival in England at the proper season, as the arrangement which then obtained with respect to both these important points was evidently faulty, a relic of a time when the means of communication with England, and with different parts of India, were very different to what they are now. The Commission were of opinion that instead of being selected at the end of the rains, as had hitherto been the practice, the men should be brought before the Invaliding Boards towards the close of the cold season, by which time the health of many of them would no doubt be improved, and the necessity of sending them to England in not a few cases would have disappeared. They further proposed that invalids should be despatched from India so as to arrive in England not earlier than April. This new, and much improved arrangement, came into force for the first time in the case of the invalids of 1871. It was not completely carried out, but many of the Boards did not assemble till the early part of 1872, and a great proportion of the invalids did not embark till the spring of this year. Had the returns of invaliding been confined to those who were passed in 1871, they would have included but a small proportion of the invaliding which ought to be debited to that year. It was therefore resolved to take the whole invaliding of the early months of 1872, and to include this in the Statement of invaliding which properly belongs to 1871. This arrangement has involved considerable increase of labor, and it has also necessitated the return of all the Statements for alteration; but there can be no question that the statistics so framed will give a much more correct estimate of the loss by invaliding which is to be ascribed to 1871, than if they included only the men who passed the Invaliding Boards during that year. A similar system will be adopted for the future, and in this manner the annual Statements will show, for each year, not only the sickness and mortality, but also the loss from invaliding which properly belong to it.

Extent of invaliding in Bengal in 1871 compared with previous years.

87. In the Bengal Presidency, during the season 1871-72, 1,564 men were invalided, of whom 1,115 were sent home for change, and 449 for discharge. This statement, it is to be observed, merely represents the recommendations of the Invaliding Boards in this country, and does not show how the men were ultimately disposed of. On this important point no information has been furnished regarding former years; but under the new arrangements to be referred to presently, valuable data will in future be obtained. The total loss by invaliding due to 1871 amounts to 47·53 per 1,000, a proportion somewhat under that of either 1869 or 1870, and almost the same as it was in 1865, and again in 1867. Of this 47·53 per 1,000, 33·88 were recommended for change, and 13·65 for discharge.

Invaliding in Madras and Bombay for 1871.

88. As regards Madras and Bombay, the invaliding has been taken up to the spring of 1872, just as has been done for Bengal; but as this is the first year for which the statistics of the European armies in the minor Presidencies have been collected in this Office, any invaliding which took place in them in the early part of 1871 has been omitted. In none of the Armies did this occur to any great extent; but it is well that any error of this nature, which would involve the addition, more or less, of the loss which is properly to be attributed to two years should be obviated. Calculated according to this method, it appears that in Madras for 1871, the number of men invalided amounted to 489, or a ratio of 45·09 per 1,000; of these 362 were sent home for change, and 127 for discharge, the proportions having been 33·38 and 11·71 per 1,000,—results which correspond very nearly with those of Bengal. In Bombay the returns were much more favorable. The total number invalided amounted to only 328, of whom 215 were

recommended for change, and 113 for discharge. The total loss amounted to only 30·26 per 1,000, or 19·83 under the one head, and 10·43 under the other.

Causes of invaliding.

89. In Bengal the great causes of invaliding were general debility,—no doubt in most cases the result of Fever, Hepatitis, Phthisis Pulmonalis, and Diseases of the Heart and Lungs. It is worthy of notice that 100 men were invalided on account of Secondary Syphilis, while Rheumatism, often no doubt of syphilitic origin, contributed 88 more. In Madras the high ratio of invaliding, due to Hepatitis and Bowel Complaints, deserves notice, these two causes alone having contributed a loss of 14 per 1,000. Under the head of Fevers the ratio is very small; but, as in Bengal, Phthisis occupies a prominent place. From Secondary Syphilis the proportion of invaliding in Madras was even higher than in Bengal. Under every head Bombay shows the most satisfactory results. Indeed, excepting general debility, Hepatitis, Heart Disease and Phthisis, there is no disease, or class of diseases to which any great loss is ascribed.

Total loss by death and invaliding in the three Presidencies.

90. The total loss of the European Force in each of the three Presidencies, and of the European Army of India as a whole, during 1871 was as follows:—

	Per 1,000 of average strength.		
	Died.	Invalided.	Total Loss.
Bengal	17·83	47·53	65·36
Madras	20·10	45·09	65·19
Bombay	14·02	30·26	44·28
Army of India	17·53	43·62	61·15

a statement which shows remarkably in favor of Bombay.

Invaliding of 1871 compared with that of each year since 1860 in the three Presidencies.

91. Before leaving the important subject of invaliding, it will be well to consider the results of 1871 in the three Presidencies in more detailed comparison with those of former years. In the annexed Statement, the results of the eleven years from 1860 to 1871 are exhibited for Bengal, Madras, and Bombay, in a more complete form than that already given in paragraph 9:—

Statements showing particulars regarding Invaliding among European Troops in the three Presidencies during the twelve years 1860—1871.

BENGAL.*

Year.	Total number of men invalided each year.	Ratio of invaliding per 1,000 of average strength.	Details.			
			Number sent home for discharge from the service.	Ratio of invaliding for discharge per 1,000 of average strength.	Number sent home for change of climate.	Ratio of invaliding for change per 1,000 of average strength.
1860	2,156	44·09	1,364	27·89	792	16·20
1861	1,260	28·09	581	12·95	679	15·14
1862	1,354	31·50	572	13·31	782	18·19
1863	1,446	34·97	600	14·51	846	20·46
1864	1,484	36·75	577	14·29	907	22·46
1865	1,744	46·87	639	17·18	1,105	29·69
1866	1,717	49·04	608	17·37	1,109	31·67
1867	1,636	47·28	546	15·78	1,090	31·50
1868	1,405	45·58	421	13·66	984	31·92
1869	1,800	53·98	503	15·09	1,297	38·89
1870	1,693	52·50	270	8·37	1,423	44·13
1871	1,564	47·53	449	13·65	1,115	33·88

---

* From Dr. Bryden's Tables.

MADRAS.*

YEAR.	Total number of men invalided each year.	Ratio of invaliding per 1,000 of average strength.	DETAILS.			
			Number sent home for discharge from the service.	Ratio of invaliding for discharge per 1,000 of average strength.	Number sent home for change of climate.	Ratio of invaliding for change per 1,000 of average strength
1860	647	57·7	91	8·1	556	49·6
1861	382	35·5	143	13·3	239	22·2
1862	355	28·3	120	9·5	235	18·7
1863	506	40·0	146	11·5	360	28·5
1864	845	65·0	182	14·0	663	51·0
1865	508	38·9	65	4·9	443	33·9
1866	645	56·6	120	10·5	525	46·1
1867	590	54·6	114	10·5	476	44·1
1868	634	62·4	97	9·5	537	52·8
1869	573	55·7	85	8·2	488	47·4
1870	827	77·0	71	6·6	756	70·4
1871	489	45·09	127	11·72	362	33·38

* From 1860-1870 supplied by the Inspector General of Hospitals, Her Majesty's British Forces, Madras for 1871, Dr. Bryden's Tables.

BOMBAY.†

YEAR.	Total Number of men invalided each year.	Ratio of invaliding per 1,000 of average strength.	DETAILS.			
			Number sent home for discharge from the service.	Ratio of invaliding for discharge per 1,000 of average strength.	Number sent home for change of climate.	Ratio of invaliding for change. per 1,000 of average strength
1860	276	24·33	102	8·99	174	15·34
1861	260	28·59	110	12·10	150	16·49
1862	365	30·75	129	10·87	236	19·88
1863	401	32·58	176	14·28	225	18·25
1864	402	33·02	169	13·88	233	19·14
1865	373	31·37	176	14·80	197	16·57
1866	555	45·96	258	21·36	297	24·59
1867	522	43·99	206	17·36	316	26·63
1868	355	36·15	151	15·38	204	20·77
1869	263	24·96	102	9·68	161	15·28
1870	......	27·8	113	10·43	215	19·83
1871	328	30·26				

† From 1860-1869 supplied by the Inspector General of Hospitals, Her Majesty's British Forces, Bombay; for 1870 the Report of the Sanitary Commissioner, Bombay, for that year; for 1871, Dr. Bryden's Tables.

Measures have been taken for obtaining information regarding the final disposal of men invalided from India.

92. In last Annual Report the importance of obtaining information as to the final disposal of men who were invalided from India, was much insisted on. Arrangements have now been adopted for securing such data. A nominal roll of men sent home each year will be furnished to the Principal Medical Officer at Netley, and this will be returned to India, with particulars added in the last column to show what became of each man; whether he died at sea or at Netley, in either of which cases the date on which, and the disease from which death occurred will be noted; whether he was discharged as unfit for further service, or whether he was able to rejoin his regiment. With such details, the information regarding invaliding will be much more complete and satisfactory than it has yet been. Some time will necessarily be occupied in procuring these data, but it is hoped that when reporting in future on the invaliding of one year, it may at the same time be possible to state how far the loss of the year previous had been temporary, and how far it had been permanent.

Sickness and mortality in different stations.

93. The statistics of different stations are very fully detailed in Tables XX, XXI, and XXII. Here may be seen the proportion of cases of sickness in each cantonment, and the amount due to the chief causes; the ratio of sickness for the year and for each month separately, the extent of the mortality, and the diseases which occasioned it. These details have in some degree been already referred to in speaking of the results in the different groups, and in discussing the history of the chief diseases. But a general view of all the places occupied by European Troops in India in these important respects is of much interest. Omitting all cantonments in which the average strength was under 200 men, and also those which were not occupied throughout the entire year, the cases of sickness were

in smaller proportion at Chuckrata than in any other cantonment. The admissions here were only 732 per 1,000. At Belgaum they were only 766, and at Bareilly 794. At Nowshera the maximum of 3,395 was reached. At Cawnpore the daily sick equalled the high proportion of 107 per 1,000. At Dum-Dum, Chuckrata and Aden it was only 32. As respects mortality Dugshaie stands first, for the death-rate there was at the minimum of 5·45. At Secundrabad, owing to the cholera outbreak, it was 40·08.

Sickness and mortality in different Regiments.

94. Table No. XXX contains a record of the number and causes of admissions into hospital, of deaths, and also of invaliding in every Regiment and Battery throughout this Presidency. The ratios under each of these heads are also shown. No. XXXI affords similar information regarding Regiments in Madras and Bombay. These Tables are of much interest, but their value will more clearly appear in after years. They have been designed in order to record the history of Regiments throughout their Indian service, so that the facts may eventually be used as a basis for general conclusions. These statistics have not yet been sufficiently long in operation even in Bengal to admit of their being fully employed in the manner indicated; but as Regiments which have appeared in the earliest Regimental Tables return to England, a new field of enquiry will be opened. The question of how the relief of Regiments during their Indian service may be best arranged, so that due regard being had to political and military considerations, they may be least affected by climatic influences, is one of great practical importance. The experience of the new Regiments in 1871, Her Majesty's 56th, 63rd, 65th, and 72nd, was generally favorable.

Average number of days spent in hospital by each man of different Regiments.

95. Table XXXII, showing the average number of days in hospital per man of each Regiment, presents the facts regarding comparative sickness in different Corps in another and very striking light. In the Bengal Presidency, the average time spent in hospital throughout 1871 by each man, varied from 5 in a Battery at Rawul Pindee and 10 in the 55th Regiment at Chuckrata, to 41 in the G. Battery, 8th Brigade, Royal Artillery, at Jullundur. In the Madras Presidency, the minimum was 11 in the 7th Battery, 5th Brigade, at Bellary, and in the 7th Battery, 6th Brigade, at Secundrabad. In another Battery at this last station, G. Battery, 9th Brigade, the average was 27, but the maximum was reached in the D. Battery, 20th Brigade, at Kamptee, in which the average time spent by each man in hospital was 33 days. In the Bombay Presidency, 3rd Battery, 6th Brigade, at Bombay, gives 10, while the 1-8th Regiment at Nusseerabad gives 32. In comparing these figures, it must be remembered that high averages are frequently caused by the prevalence of venereal disease, of which cases often remain for a long time under treatment.

Strength of troops and families in the hills in 1871.

96. The strength of British Troops in the hills during the hot season and rains of 1871, somewhat exceeded the number so located at the corresponding period of 1870. A return furnished by the Quarter Master General shows that excluding convalescent depôts there were in the hills on 1st June 1871, 134 officers and 4,666 men, and that in addition 400 men from each of the two Regiments at Peshawur, the 2-60th and the 1-6th, and 50 men of the Royal Artillery, had been ordered to Cherat. At the hill convalescent depôts, the strength on that date amounted to 81 officers and 2,189 men. In addition 120 young soldiers of the 72nd Highlanders were sent to Kussowlie and Dugshaie. The total number of men in the hills throughout the entire hot season and rains was 6,855, and from the middle of June it increased to 7,825. The strength of women and children in the hills is not given in this Statement, but is detailed in the Tables of women and children to be found in the Appendix.

Admissions into Hospital at each station of the Madras Presidency by months, 1860-69.

97. In last Annual Report, several Statements were given in order to illustrate the details of sickness and mortality among European Troops in the three Presidencies during a series of years. Particulars regarding the causes of admissions into hospital and their distribution according to months had then been obtained only for Bengal, but similar information has now been received from the Inspectors General of Hospitals in the other Presidencies. The results in Madras during the 10 years 1860—69 have been as follow:—

European Army of the Madras Presidency, 1860—69.*

STATIONS.	Strength.	Total admission-rate per 1,000 of the average strength.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Average for the ten years.
Bangalore ...	15,047	753	760	816	807	879	849	1,045	930	908	1,008	883	788	1,043
Kamptee ...	10,946	985	1,052	1,159	1,176	1,529	1,506	1,587	1,577	1,975	1,768	1,168	1,123	1,661
Bellary ...	9,609	1,099	1,009	1,184	1,067	1,258	1,227	1,367	1,211	1,161	1,294	1,277	1,072	1,423
Secunderabad ...	25,984	1,167	1,052	1,204	1,264	1,328	1,133	1,509	1,524	1,566	1,504	1,306	1,162	1,572
Saint Thomas' Mount.	3,579	1,310	1,164	1,650	1,243	1,673	1,371	1,410	1,081	1,159	1,343	1,136	1,231	1,577
Rangoon ...	8,879	1,015	959	1,040	1,040	1,052	1,018	1,128	1,112	1,157	1,047	1,091	900	1,256
Madras ...	9,198	1,147	1,180	1,200	1,365	1,483	1,275	1,503	1,411	1,197	1,303	1,020	984	1,507
Tounghoo ...	5,212	982	1,071	1,266	1,128	1,136	1,207	1,266	1,101	1,186	1,184	1,063	952	1,354
Thayetmyo ...	4,554	1,002	650	1,162	1,110	1,419	1,375	1,545	1,191	991	986	894	1,459	1,379
Cannanore ...	7,139	1,135	1,012	1,035	1,036	1,215	1,053	1,133	1,064	1,044	1,168	1,100	1,135	1,313
Calicut ...	828	493	156	337	397	542	349	373	481	373	638	650	698	549
Malliapoorum ...	1,088	522	357	623	605	651	660	605	587	660	513	376	541	670
Trichinopoly ...	2,408	1,344	867	975	1,253	1,286	1,012	1,610	1,278	1,195	1,348	1,298	1,257	1,472
Port Blair ...	538	1,111	777	944	1,351	1,370	2,055	1,555	1,463	1,351	1,000	796	851	1,462
Seetabuldee ...	181	1,277	888	1,500	1,611	1,500	1,222	2,555	3,888	4,888	4,111	3,611	1,555	2,861
Singapore ...	747	1,253	973	973	933	1,293	1,266	1,213	1,186	1,160	1,066	1,093	1,066	1,348
Palaveram ...	398	775	850	725	125	250	200	225	300	750	750	650	700	630
Penang ...	265	888	1,259	1,296	1,555	1,148	1,185	1,407	1,000	1,074	888	1,000	1,111	1,381
Waltair ...	424	1,095	952	1,428	1,642	1,738	1,619	1,785	1,357	1,404	1,785	1,547	1,309	1,766
Masulipatam ...	193	52	52	52	52	52	52	52	52	52	52	52	...	57
Jaulnah ...	338	647	852	1,411	411	323	294	323	500	441	794	558	882	744
DEPOTS.														
Poonamallee ..	2,014	2,119	1,800	1,676	1,159	1,417	1,328	1,833	1,278	1,641	1,552	1.597	1,781	1,868
Wellington ...	5,376	813	754	780	1,005	1,163	996	1,139	944	826	884	970	838	1.111
Ramandroog ...	548	581	545	800	1,145	1,272	1,181	1,181	1,145	872	545	745	581	1,060
Chindwarrah ...	255	1,640	1,120	2,160	2,320	3,120	2,840	3,440	3,760	3,880	2,920	1,680	1,360	3,024
Madras Presidency.	115,748	1,051	975	1,107	1,112	1,250	1,145	1,337	1,251	1,275	1,279	1,119	1,051	1,395

---

* Furnished by Inspector General of Hospitals, British Medical Service, Madras.

Admissions into hospital at each Station of the Madras Presidency from the chief causes, 1860–69.

98. The proportion in which the chief diseases have contributed to these results is given in the following Table:—

*European Army of the Madras Presidency, 1860—69.**

Stations.	Strength.	Admission-rate per 1,000 of the average strength.															Total.
		Cholera.	Small-pox	Apoplexy.	Fevers.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Rheumatism.	Venereal Diseases.	Respiratory Diseases.	Ophthalmia.	Wounds and Accidents.	All other Causes.		
Bangalore ...	15,047	4·25	0·80	0·33	99·82	5·25	35·82	76·76	39·61	43·73	212·53	27·91	25·25	119·79	360·80		1043·48
Kamptee ...	10,946	10·69	1·83	1·83	610·91	3·75	44·03	63·04	62·03	55·73	258·63	44·95	25·49	99·31	379·41		1661·61
Bellary ...	9,609	14·15	0·52	0·94	179·00	2·50	52·14	99·39	48·91	65·15	262·25	60·78	74·93	115·83	446·87		1423·35
Secunderabad ...	25,934	3·58	0·35	0·54	264·39	4·62	165·64	106·52	109·49	61·64	228·29	44·18	19·63	123·19	436·65		1572·12
St. Thomas' Mount	3,579	1·96	0·84	1·12	156·75	4·19	81·03	68·45	94·72	74·04	357·36	56·44	29·62	166·25	48·53		1578·09
Rangoon ...	8,879	1·01	...	0·79	157·18	5·29	88·04	56·43	62·28	44·26	251·27	47·87	24·78	88·07	399·03		1258·67
Madras ...	9,198	8·48	0·65	0·54	272·02	7·50	43·92	101·11	60·77	72·62	313·87	40·79	12·94	85·12	487·39		1507·72
Tounghoo ...	5,212	1·15	0·96	0·96	289·14	4·99	93·82	78·28	49·50	52·00	172·68	24·94	13·05	93·65	479·86		1354·18
Thayetmyo ...	4,554	14·27	...	1·32	170·18	3·07	49·85	101·45	61·70	63·02	217·17	50·94	25·69	134·39	485·29		1378·35
Cannanore ...	7,139	1·54	0·84	0·70	106·04	5·18	85·59	115·84	60·65	56·03	201·43	39·08	18·07	132·79	489·93		1313·77
Calicut ...	828	...	...	...	31·40	7·25	53·14	28·99	32·61	16·91	83·33	7·25	2·42	70·05	217·39		550·72
Malliapooram ...	1,088	...	...	...	15·63	3·68	63·42	57·90	48·71	29·41	73·53	15·63	11·03	94·67	258·27		671·88
Trichinopoly ...	2,408	3·32	0·42	0·83	182·31	6·64	44·44	68·11	62·29	73·50	377·08	42·77	29·90	135·80	446·43		1473·84
Port Blair ...	538	...	...	...	371·75	11·15	81·78	72·19	89·22	70·63	94·80	44·61	13·01	237·92	381·04		1468·40
Seetabuldee ...	181	5·52	5·52	...	1082·87	27·62	110·50	127·07	121·55	138·12	436·46	66·30	44·20	215·47	461·09		2845·30
Singapore ...	747	...	...	...	143·24	13·39	25·44	96·39	53·55	42·84	127·18	45·52	18·74	185·76	598·39		1353·41
Palaveram ...	398	2·51	...	...	45·23	...	12·56	55·28	17·57	40·20	105·53	15·08	10·05	105·53	223·62		633·17
Penang ...	265	...	...	3·77	135·85	3·77	18·87	120·75	22·64	56·60	113·21	79·25	45·28	162·26	645·28		1407·55
Waltair ...	424	2·36	4·72	...	195·75	4·72	82·55	160·38	80·19	103·77	478·77	63·68	47·17	125·00	400·94		1750·00
Masulipatam ...	193	10·36	...	...	5·18	...	...	...	5·18	...	5·18	...	5·18	...	25·91		56·99
Jaulnah ...	338	11·83	...	...	239·64	5·92	53·25	32·54	47·34	11·83	59·17	11·83	23·67	88·76	162·72		748·52
Depots.																	
Poonamallee ...	2,014	0·99	1·99	1·99	114·20	6·45	249·25	66·53	213·51	141·51	312·31	84·41	38·73	52·14	580·93		1864·95
Wellington ...	5,376	2·60	0·37	...	155·51	4·28	49·11	67·15	43·15	53·18	141·37	44·27	14·51	127·60	404·39		1110·49
Bamaudroog ...	548	5·47	...	5·47	348·54	5·47	76·64	43·80	25·55	58·39	94·89	56·57	32·85	40·15	270·07		1063·87
Chindwarrah ...	255	35·29	...	...	1188·24	...	86·27	47·06	109·80	168·63	619·61	58·82	47·06	117·65	486·27		2964·71
Madras Presidency	115,748	6·45	0·66	0·78	236·34	4·86	84·91	86·31	70·16	58·95	236·57	43·15	25·87	113·00	428·72		1395·72

* Furnished by Inspector General of Hospitals, British Medical Service, Madras.

Admissions into hospital in Bombay, 1861—69, by months.

99. For the Bombay Army the returns extend only for 9 years, 1861—69.

European Army of the Bombay Presidency, 1861—69.*

Stations.	Strength.	Average admission-rate per 1,000 of the average strength.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total average per annum.
Bombay	6,368	138	120	113	108	162	159	196	131	112	144	144	121	1,279
Surat	161	389	426	404	383	140	206	404	158	222	422	259	123	2,701
Deolalee	1,258	85	60	112	203	131	101	359	233	204	176	71	121	1,418
Butcher's Island	148	...	...	...	53	57	86	152	127	73	...	90	50	824
Ahmedabad and Dhooliacote ...	2,543	151	140	110	121	133	144	162	162	162	268	174	147	1,421
Baroda	534	136	45	80	112	177	200	168	192	176	470	266	134	1,704
Teethul and Bulsar ...	77	432	186	247	182	269	246	...	...	...	...	315	416	2,389
Deesa	9,768	115	83	92	94	100	105	132	130	121	151	130	105	1,027
Mount Aboo	1,053	205	109	117	152	124	130	211	151	140	325	271	194	1,475
Belgaum	12,162	133	106	99	124	113	96	112	100	78	116	98	83	949
Rairoo	54	176	282	210	177	44	...	...	...	...	...	...	...	1,759
Aden	7,339	95	70	81	111	105	118	105	85	77	73	70	68	801
Poona	22,739	123	108	97	114	107	108	144	123	92	121	92	86	992
Kirkee	5,731	153	117	114	131	130	122	149	138	118	127	105	91	1,123
Khandalla	997	154	106	115	174	136	147	83	428	66	164	109	199	1,330
Sattara	2,172	79	88	86	132	92	75	96	113	123	158	129	87	910
Ahmednuggur	6,340	127	112	110	133	156	188	160	136	100	120	109	87	1,134
Asseerghur	1,309	156	101	95	96	106	84	100	158	116	165	136	121	1,071
Poorundhur	979	21	278	227	242	201	130	112	141	93	263	252	245	1,779
Maunder Deo	240	...	103	73	48	61	26	...	...	...	...	...	...	529
Sholapore	1,234	144	128	127	145	141	143	150	157	136	193	220	216	1,410
Mhow	16,343	122	110	112	127	131	115	140	157	172	231	144	106	1,254
Indore	1,153	133	97	90	125	127	109	106	137	186	197	127	87	1,121
Nusseerabad	9,610	114	84	103	139	141	147	193	219	272	322	205	104	1,547
Neemuch	4,433	206	126	130	191	196	201	247	246	328	467	351	233	2,170
Ajmere	639	134	111	33	159	130	112	214	247	213	276	237	112	1,466
Tarraghur	213	58	34	150	494	244	168	197	169	114	45	164	68	1,384
Odeypore	14	...	...	...	...	...	...	...	...	...	...	100	129	1,071
Kurrachee	12,456	105	97	96	122	123	125	142	121	104	142	133	122	1,069
Ghizree	726	317	33	183	238	242	88	287	157	127	184	120	216	1,561
Hyderabad, Sind	4,655	...	66	78	94	108	103	113	88	92	122	121	113	905
On march	4,773	96	84	93	165	23	230	250	36	76	103	119	88	883
Bombay Presidency ...	138,221	124	102	102	128	127	122	148	129	132	173	131	105	1,152

---

* Furnished by Inspector General of Hospitals, British Medical Service, Bombay.

Admissions into hospital in Bombay, 1863–69, according to diseases.

100. The details regarding diseases in Bombay extend from 1863—69.

European Army of the Bombay Presidency, 1863—1869.*

Stations.	Strength.	Admission-rate per 1,000 of the average strength.														
		Cholera.	Small-pox.	Apoplexy.	Fevers.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Rheumatism.	Venereal Diseases.	Respiratory Diseases.	Ophthalmia.	Wounds and Accidents.	All other Causes.	Total.
Bombay	6,336	4·68	0·16	0·16	256·12	21·15	32·99	62·5	36·77	46·40	92·17	28·41	19·41	53·66	237·87	891·86
Doolalee	1,618	7·42	...	0·62	553·62	4·33	24·09	105·07	18·54	28·42	82·20	17·31	8·03	51·29	207·29	1108·13
Butcher's Island ...	190	...	...	5·26	142·11	5·26	42·11	84·22	...	5·26	100·00	5·26	10·52	15·78	147·37	563·15
Ahmedabad	2,686	7·07	0·74	...	322·78	18·99	16·75	41·33	21·22	39·46	131·74	26·81	61·08	108·34	296·72	1088·03
Baroda	687	45·12	1·45	...	684·13	24·75	26·20	50·95	17·47	23·29	72·78	8·73	16·01	129·56	243·08	1349·51
Teethul and Bulsar ...	99	...	...	...	444·44	20·20	111·11	50·50	101·1	40·40	80·80	50·50	50·50	40·40	515·15	1505·10
Deesa	9,773	1·13	0·61	0·51	280·78	6·15	5·52	47·17	18·42	19·05	123·81	11·87	27·73	33·77	158·19	744·31
Mount Aboo	1,151	...	0·87	...	476·11	6·95	17·29	40·83	35·62	30·41	110·42	13·90	26·19	30·09	244·13	1046·81
Belgaum	12,068	0·33	...	...	98·03	8·12	23·94	29·08	22·04	29·14	232·68	21·29	14·91	40·68	126·08	646·27
Rairee	49	...	...	...	122·45	...	20·44	20·41	163·26	81·63	285·71	...	61·22	...	163·26	918·38
Aden	7,994	3·13	0·25	0·38	106·33	6·50	14·80	40·04	20·89	14·38	77·43	17·76	42·03	47·54	170·25	570·80
Poona	23,880	1·05	0·88	0·17	231·11	15·53	18·55	33·92	31·53	32·33	125·71	23·28	31·41	55·23	182·12	782·82
Kirkee	6,565	3·66	0·15	...	189·18	6·85	14·47	54·68	29·39	40·15	144·66	25·29	19·19	91·69	226·81	852·37
Khandalla	850	1·18	...	...	135·29	15·29	54·12	85·88	70·59	75·29	114·12	15·29	38·24	86·47	316·47	948·29
Sattara	2,173	0·46	0·46	...	206·63	14·26	7·82	23·93	10·12	29·91	129·31	17·49	14·26	52·46	129·31	636·42
Ahmednuggur	6,062	7·09	0·16	0·32	164·12	18·81	9·07	63·02	30·52	27·54	146·82	16·17	8·74	99·47	265·92	857·27
Asseerghur	1,379	4·35	...	1·45	209·76	10·88	11·60	54·39	80·78	33·36	75·42	21·75	4·35	71·79	183·47	829·15
Poorundhur	1,078	10·20	...	0·93	347·80	0·93	30·61	96·39	60·29	98·22	114·92	28·73	88·12	22·26	356·21	1255·61
Maunder Deo	308	...	...	...	90·58	6·49	3·24	29·22	12·99	6·49	58·44	19·48	16·23	32·47	136·36	411·99
Sholapore	1,418	0·71	...	...	469·92	17·69	19·11	32·56	55·91	43·17	83·51	9·20	12·74	105·46	260·44	1110·41
Mhow	16,087	2·92	1·12	0·06	391·81	11·25	14·67	45·01	20·45	41·39	158·69	28·47	16·09	70·24	212·04	1014·21
Indore	1,134	1·76	0·88	...	387·12	31·74	5·29	52·91	17·63	45·86	115·52	16·75	12·34	82·89	182·54	953·23
Nusseerabad	8,876	12·84	0·56	0·10	467·44	6·65	25·12	59·93	31·32	35·60	171·25	20·62	27·04	43·82	198·96	1101·25
Neemuch	4,125	18·30	0·23	0·48	666·44	25·54	33·44	42·94	36·16	40·90	132·65	34·57	16·27	70·84	305·81	1430·05
Ajmere	612	8·17	9·80	...	568·63	4·90	34·31	49·02	11·26	27·78	177·94	13·07	6·53	50·65	163·39	1125·45
Tarraghur	152	...	...	...	493·42	...	46·07	59·21	46·07	26·33	125·00	6·58	65·79	6·58	263·18	1138·22
Oodeypore	18	...	...	...	833·33	...	111·11	55·56	...	...	55·56	111·11	111·11	...	55·56	833·34
Kurrachee	12,617	1·27	0·32	0·32	282·56	15·45	19·57	43·75	25·28	38·84	102·56	32·10	28·14	61·27	197·03	848·45
Ghizree	852	...	...	...	272·80	...	57·51	86·86	68·07	59·86	61·03	43·41	28·17	15·26	355·63	1048·10
Hyderabad, Sind ...	5,401	0·37	0·37	0·37	207·55	11·11	15·00	30·73	10·81	24·44	80·73	17·59	20·44	61·10	190·70	689·31
On march	5,021	8·16	0·39	...	183·23	4·88	27·48	45·41	18·12	27·68	91·21	21·51	10·36	45·61	131·45	614·99
Bombay Presidency ...	141,564	4·03	0·54	0·21	277·08	12·32	19·08	45·71	26·61	33·92	127·50	22·98	24·27	58·83	197·81	850·89

* Furnished by Inspector General of Hospitals, British Medical Service, Bombay.
No Returns for Stations were kept prior to 1863.

Comparison of sickness in the three Presidencies as shown in the foregoing Statements.

101. A comparison between the statistics of the three Presidencies during a series of years shows that in regard to cases of sickness, Bombay gives the most favorable returns. During the 9 years 1861—69, the ratio per 1,000 in this Presidency was only 1,152; in Madras during the 10 years 1860—69, it equalled 1,395; and in Bengal during these same 10 years, it was 1,754. The Statements furnished in last year's Report regarding the ratio, both of daily sickness and of deaths, place the three Presidencies in similar order—Bombay first, next Madras, and Bengal last. The results may thus be summarised:—

1860—1869.	Average annual ratio per 1,000 of average strength.		
	Cases of sickness.	Daily sick.	Deaths.
Bengal	1,754	67	29·98
Madras	1,395	62	17·71
Bombay	1,152*	59	16·66

Statistics of women and children in the Army of India.

102. The statements designed to show the extent of sickness and mortality among the wives and children of European soldiers in 1871 are very complete. Throughout the whole of India the number of the first averaged 6,384. The cases of sickness equalled 1,050, the daily sick 41, and the deaths 24·12 per 1,000. The extent of sickness cannot be fairly estimated by these figures, for many ailments are treated in quarters, and moreover, under the new nomenclature, cases of

---

* 1861—1869.

child-birth are not reckoned, even although the women are admitted into hospital on such occasions. The mortality among the women in the three Presidencies in 1871 was as follows:—

Statement showing the mortality among European soldiers' wives in the three Presidencies during 1871.

1871.	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	DIED PER 1,000	
				From cholera.	From all causes.
Bengal	3,680	9	105	2·45	28·53
Madras	1,421	3	26	2·11	18·30
Bombay	1,283	...	23	...	17·93
Army of India	6,384	12	154	1·88	24·12

The results in Bengal compare very unfavorably with those of the other Presidencies, and this is the more unsatisfactory, as the high death-rate of 28·53 per 1,000 is not to be accounted for by any such special cause as the prevalence of cholera.

Death-rate among women in Bengal in 1871 favorable when compared with previous years.

103. Compared with the average of previous years, the death-rate among women in Bengal in 1871 is favorable, as may be seen from the annexed Statement, in which the results for the last 12 years are exhibited. It will be observed that excepting 1866 the death-rate in 1871 was lower than in any of them.

Statement showing the mortality among the women of European Regiments in the Bengal Presidency from 1860—1871.*

YEARS.	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	DIED PER 1,000.	
				From cholera.	From all causes.
1860	2,080	38	117	18·27	56·25
1861	2,293	64	156	27·91	68·03
1862	2,397	40	99	16·69	41·30
1863	2,510	19	88	7·57	35·06
1864	2,700	19	102	7·04	37·78
1865	2,738	16	115	5·84	42·00
1866	2,789	10	71	3·58	25·46
1867	3,008	58	139	19·28	46·21
1868	3,196	9	101	2·82	31·60
1869	3,602	59	195	16·38	54·14
1870	3,519	13	115	3·69	32·68
1871	3,680	9	105	2·45	28·53

* From Dr. Bryden's Tables.

Mortality among women in Madras in 1871 compared with that of previous years.

104. In Madras the death-rate among women has fluctuated greatly in different years, as may be seen from the annexed Statement.

It is singularly favorable compared with that for Bengal.

Statement showing the mortality among the women of European Regiments in the Madras Presidency from 1860—1871.*

YEARS.	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	DIED PER 1,000.	
				From cholera.	From all causes.
1860	699	5	26	7·16	37·20
1861	756	4	24	5·29	31·74
1862	1,483	2	26	1·35	17·53
1863	1,561	8	31	5·13	19·86
1864	1,526	2	27	1·31	17·69
1865	1,660	17	44	10·25	26·51
1866	1,389	10	37	7·20	26·64
1867	1,369	... ...	18	......	13·15
1868	1,294	1	14	·78	10·82
1869	1,268	2	32	1·57	25·23
1870	1,329	6	26	4·51	19·56
1871	1,421	3	26	2·11	18·30

* From 1860–69 furnished by the Inspector General of Hospitals, British Medical Service, Madras; for 1870, Report of Sanitary Commissioner for Madras for that year; for 1871, Dr. Bryden's Tables.

Mortality among women in Bombay in 1871 compared with that of previous years.

105. In Bombay, although not so low as it was in 1866, the mortality among the women in 1871 was under that of any of the other years from 1860, as will be seen in the following Statement. In many of them the death-rate has been very high.

Statement showing the mortality among the women of European Regiments in the Bombay Presidency from 1860-71.*

YEARS.	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	DIED PER 1,000.	
				From cholera.	From all causes.
1860	662	6	21	9·06	31·72
1861	592	11	36	18·58	60·81
1862	968	5	35	5·17	36·16
1863	972	... ...	29	......	29·83
1864	1,040	1	24	·96	23·08
1865	1,110	43	64	38·74	57·66
1866	1,248	......	18	......	14·42
1867	1,253	9	33	7·19	26·34
1868	1,085	2	22	1·85	20·28
1869	1,215	11	45	9·14	37·12
1870	1,213	......	26	... ...	21·43
1871	1,283	......	23	... ...	17·93

* From 1860-69 furnished by the Inspector General of Hospitals, Her Majesty's British Forces, Bombay; for 1870, the Report of the Sanitary Commissioner of Bombay for that year; for 1871, Dr. Bryden's Tables.

Chief forms of sickness and causes of death among the women in 1871.

106. In Table IX of this series the deaths among the women at the different stations are detailed, and in No. XIII the admissions and deaths among them from the chief diseases in the three Presidencies are compared. Of the total of 154 deaths, 16 were due to child-bearing, 21 to phthisis, and 18 to dysentery, but fever was the greatest cause of mortality. To it 31 deaths are ascribed. Of these four only are designated typhoid, but there is every probability that many of the cases returned as remittent and continued were really true enteric fever.

Statistics of sickness and mortality among the children in 1871.

107. The death-rate among the children in all the Presidencies in 1871 was high, as shown in the following summary. In their case, as in that of the women, the extent of sickness as indicated in the Tables is much below what actually occurred:—

Statement showing the mortality among soldiers' children in India during 1871.

	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	DIED PER 1,000.	
				From cholera.	From all causes.
Bengal	6,039	6	520	1·00	86·11
Madras	2,534	4	127	1·58	50·12
Bombay	2,127	0	147	0	69·11
Army of India	10,700	10	794	·93	74·21

The return for Madras is by far the most favorable. In Bombay, although not a single death was due to cholera, the mortality was considerably higher, but still much under that of Bengal.

Mortality among children in Bengal in 1871 compared with that of previous years.

108. Although not so high in some of the previous years from 1860 onwards, the death-rate among the children of European Regiment in this Presidency for 1871 has not been so favorable as in several of them, as appears from the following Statement:—

Statement showing the mortality among the children of European Regiments in the Bengal Presidency from 1860—1871.*

YEARS.	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	DIED PER 1,000.	
				From cholera.	From all causes.
1860	3,186	66	327	20·72	102·64
1861	3,079	94	283	30·53	91·91
1862	3,406	45	310	13·21	91·02
1863	3,730	14	291	3·75	78·02
1864	4,120	18	294	4·37	71·36
1865	4,221	23	351	5·79	83·15
1866	4,367	12	328	2·75	75·11
1867	4,888	94	513	19·23	104·95
1868	5,052	13	438	2·57	86·70
1869	5,688	108	826	18·99	145·22
1870	5,644	9	461	1·59	81·68
1871	6,039	6	520	1·00	86·11

---

* From Dr. Bryden's Tables.

Mortality among children in Madras in 1871 compared with that of previous years.

109. In Madras the death-rate among children, although high, has been much lower than in Bengal.

Statement showing the mortality among the children of European Regiments in the Madras Presidency from 1860—71.*

Years.	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	Died per 1,000.	
				From cholera.	From all causes.
1860	910	5	34	5·49	37·36
1861	1,040	7	56	6·73	53·84
1862	2,154	4	119	1·85	55·24
1863	2,189	6	121	2·75	55·28
1864	2,233	5	153	2·23	68·51
1865	2,478	19	1	7·66	71·02
1866	2,090	11	169	5·27	80·86
1867	2,125	......	97	......	45·65
1868	2,070	1	112	·48	54·10
1869	2,121	7	157	3·30	74·02
1870	3,060	4	160	1·30	52·2
1871	2,534	4	127	1·58	50·12

* From 1860—69 furnished by the Inspector General of Hospitals, British Medical Service, Madras; for 1870, Report of the Sanitary Commissioner for Madras for that year; for 1871, Dr. Bryden's Tables.

Mortality among children in Bombay in 1871 compared with that of previous years.

110. The death-rate in Bombay, high as it is, was lower in 1871 than in any previous year with which comparison can be made, except 1860, as will be seen from the following Statement :—

Statement showing the mortality among the children of European Regiments in the Bombay Presidency from 1860—71.*

Years.	Average strength.	Number of deaths from cholera.	Number of deaths from all causes.	Died per 1,000.	
				From cholera.	From all causes.
1860	940	11	47	11·70	50·0
1861	881	4	77	4·54	87·40
1862	1,444	3	121	2·07	83·79
1863	1,494	......	136	......	91·03
1864	1,611	8	127	4·96	78·83
1865	1,713	54	257	31·52	150·03
1866	1,916	......	156	......	81·42
1867	1,879	14	196	7·45	104·31
1868	1,779	......	148	......	83·19
1869	1,968	14	265	7·13	135·0
1870	1,974	......	146	......	74·0
1871	2,127	......	147	......	69·11

* From 1860—69 furnished by the Inspector General of Hospitals, Her Majesty's British Forces, Bombay; for 1870 from the Report of the Sanitary Commissioner, Bombay, for that year; for 1871, Dr. Bryden's Tables.

111. Tables X and XIV contain details as to the forms of sickness which chiefly prevailed among children in the three Presidencies, and the causes of mortality at different stations. Diarrhœa, convulsions, and dentition account for nearly one-half of the deaths. Thirty-four children are entered as having died of measles, 19 of hooping-cough, and 17 of scarlet fever. Of the first of these 29 occurred in this Presidency, chiefly at Peshawur and Murree. At this last station hooping-cough was also fatal. The deaths attributed to scarlet fever deserve special notice, as this disease was long believed to be unknown in India. In 1871 it was not confined to any particular locality. Of the 17 fatal cases, 12 occurred in five different places in Bengal, and the five in the Madras and Bombay Presidencies were widely scattered. Altogether throughout India 110 children of European Regiments are returned as having suffered from scarlet fever, and the details according to months and stations are given in the annexed Statement. The cases at Mean Meer were confined, with one exception, to the 37th Regiment. All the cases at Sealkote occurred in the 58th Regiment, and those at Jullundur in the 92nd Regiment. The fatal cases at Mean Meer were from the admissions of August only. If the disease were true scarlet fever, the mortality was small, but it is quite possible that cases of dengue may have been returned as scarlet fever :—

Causes and distribution of mortality among children in 1871.

Scarlet Fever of Children, 1871.

	NUMBER OF ADMISSIONS IN EACH MONTH.													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Admis.	Fatal Issue.
Dinapore	...	1	...	...	...	...	...	..	...	...	...	...	1	..
Mean Meer	..	...	...	1	...	2	23	11	...	...	..	..	37	6
Sealkote	...	...	4	1	3	1	...	.	...	...	..	..	12	1
Jullundur	...	...	9	8	2	...		..	...	...	...	...	19	3
Umballa	..	...	...	...	...	.	...	1	...	...	..	...	1	1
Deolalee (*Bengal Troops*) ...	1	...	...	...	...	...	...	...	.	.		...	1	1
Deolalee (*Bombay Troops*) ..	...	1	..	...	...	...	...	...	...	.	..	...	1	1
Aden	...	1	...	.	...	..	7*	9*	...	...	.	...	17	.
Kirkee		.	3	4	..	..	3	..	..	...	.	...	19	2
Kamptee	...	...	...	.	...	...	...	...	...	...		3	3	1
Bangalore	.	..	...	2	1	2	...		.		...		8	1
Cases	1	3	16	19	9	5	33	21	...	...	...	3	110	..
Deaths	1	1	2	1	3	...	1	7	..	...	...	1	...	17

112. The annexed Statement, prepared by Dr. Bryden, shows the mortality among children in the Bengal and Bombay Presidencies according to age. Unfortunately, the required data have not been furnished from Madras, but this defect will be remedied for the future. The results, so far as Bengal and Bombay are concerned, agree almost entirely with those for Bengal, which were first given in last Annual Report. There is the same high ratio of mortality, especially in the very early periods of life :—

Deaths of children according to age.

---

* Dengue.

Statement showing the strength of European children in the Bengal and Bombay Presidencies on the 1st April 1871, and the ratio of mortality at different ages during that year.

AGES AS AT 1ST APRIL 1871.	BENGAL.			Ratio for Bengal in 1870.	BOMBAY.		
	Strength.	Deaths.	Ratio per 1,000.		Strength.	Deaths.	Ratio per 1,000.
Under 6 months	396	119	300·50	303·11	152	51	335·53
Between 6 „ and 1 year	438	111	253·43	222·22	158	35	221·52
„ 12 „ „ 18 months	478	106	221·76	194·31	145	28	193·10
„ 18 „ „ 2 years	379	54	142·48	127·14	128	14	109·37
„ 2 years „ 3 „	603	49	81·26	85·56	210	5	23·81
„ 3 „ „ 4 „	593	24	40·47	23·47	221	3	13·57
„ 4 „ „ 5 „	515	14	27·18	30·71	194	5	10·17
„ 5 „ „ 6 „	512	10	19·53	20·00	177	2	
„ 6 „ „ 7 „	480	6	12·50	9·80	155	2	
„ 7 „ „ 8 „	366	4	7·71	11·29	130	......	
„ 8 „ „ 9 „	343	5			121	2	
„ 9 „ „ 10 „	238	1			106	None	
„ 10 „ „ 11 „	204	1			67	„	
„ 11 „ „ 12 „	161	1			51	„	
„ 12 „ „ 13 „	145	1			28	„	
„ 13 „ „ 14 „	98	None			23	„	
„ 14 „ „ 15 „	84	„			16	„	
Upwards of 15 years	46	„			14	„	
TOTAL ...	6,079	506*	83·24	79·65	2,096	147	70·13

* The ages of 12 children who died were not ascertained.

Mortality among officers in 1871.

113. The annexed Statement, which has been received from the Adjutant General of the Army, shows the mortality among officers both of Her Majesty's British and Indian Armies during 1871, and the causes to which it was due. In the former, there were in all 29 deaths out of a strength of 1,932, or a ratio of 15·01 per 1,000; in the latter, the ratio was 12·23 per 1,000, the equivalent of 24 deaths out of a strength of 1,962. These ratios are both favorable compared with the returns of former years as given in last Annual Report:—

Statement of Deaths among the Officers of Her Majesty's British and Indian Armies serving in the Presidency of Bengal during the year 1871.

Army.	Year.	Strength in India (whether on leave or not) on 1st July 1871.	Deaths during the year.		In India.																												Out of India.		
					Cause of death.																														
																													Accidental.						
			Died in India, but cause of death not stated.	Died in India, and cause of death stated.	Ague.	Apoplexy.	Apoplexy, sanguineous.	Apoplexy, sero-congestive.	Bronchitis.	Cancer in tongue.	Consumption.	Debility caused by fever.	Diarrhœa.	Disease of kidneys.	Dropsy and hepatitis.	Dropsy and Liver.	Diphtheria.	Dysentery.	Fever.	Fever, remittent.	Fever and affection of heart.	Heart disease.	Hepatitis.	Inflammation of spinal cord.	Obstruction of the bowels.	Paralysis.	Spasms of the heart.	Ulceration of intestines.	By a fall.	By a fall from their horse.	By a bear whilst out shooting.	Drowned.	Run over on parade.	Strength in Europe or beyond sea, on 1st July, whether on furlough or sick leave.	Deaths reported from England of officers whose battalions are serving in India.	Died at sea.
Her Majesty's British Army.	1871	1,654	2	21	1	...	...	...	2	1	...	...	...	...	1	1	1	...	1	1	1	1	2	...	1	...	1	1	...	2	1	1	1	278	6	
Her Majesty's Indian Army.	1871	1,149	2	16	...	1	1	1	...	...	1	1	1	2	...	...	...	1	...	...	...	1	2	1	...	1	...	...	...	1	...	1	...	513	6	

These Statements include all officers on the staff. Dr. Bryden's Returns, as they embrace only regimental officers, are somewhat different both as regards the strength and the number of deaths. Calculated on this basis, the results for the three Presidencies are as follows. The ratio of mortality among officers of European Regiments in India during 1871 was thus 12·49 per 1,000, the equivalent of 35 deaths out of a strength of 2,803.

Statement showing the Strength and Deaths, in and out of India, of the Officers of the British Army during the year 1871.

	IN INDIA																	OUT OF INDIA.	
	Strength in India (whether on leave or not) on	Total Deaths during the year.	CAUSES OF DEATH.															Strength in Europe or beyond Sea on 30th June, whether on furlough or sick leave.	Deaths reported from England of Officers whose Battalions are serving in India.
			Small pox.	Diphtheria.	Typhoid fever.	Remittent fever.	Phthisis Pulmonalis.	Dropsy.	Valve disease of heart.	Hypertrophy of heart.	Angina pectoris.	Dysentery.	Hepatitis.	Atrophy of liver.	Drowned.	Killed by bear.	Accident.		
Army of Bengal*	1,425	16	1	1	....	3	1	1	1	......	1	....	2	......	1	1	3	284	8
,, Madras .. .	452	4	......	..	2	...	1	...	....	1	..	.....	...	...	...	...	....	98	1
,, Bombay	447	5	1	...	......	...	....	...	1	......	....	1	1	1	...	....		97	1
,, India	2,324	25	2	1	2	3	2	1	2	1	1	1	3	1	1	1	3	479	10

* Exclusive of the 22nd Brigade, Royal Artillery, which furnished no return.

Results of mortuary registration in cantonments.

114. The number of deaths registered as due to the chief diseases among the native population of the cantonments of this Presidency are shown in the following Statement:—

Statement showing the Deaths from different causes registered among the general population of Military Cantonments in the Bengal Presidency during 1871.

Cantonments.	Average Strength of the resident population.	Cause of Death.						Total Deaths of the year
		Cholera.	Small-pox.	Fever.	Bowel Complaint.	Accidents and violence.	All other causes.	
Fort William	392	......	......	1	.....	......	2	3
Alipore	331	......	....	1	5	......	....	6
Dum-Dum	7,320	5	......	25	1	......	7	38
Barrackpore	7,166	3	.....	109	11	......	6	129
Berhampore	1,471	11	......	31	......	1	5	48
Dacca	157	......	......	......	1	......	5	6
Shillong	641	......	......	...	.....	.....	......	......
Gowhatty	316	......	.....	2	1	...	2	5
Cachar	175	.....	......	1	1	......	....	2
Debrooghur	1,180	.....	......	10	......	......	9	19
Buxa Dooar	447	....	.....	.....	6	1	4	11
Julpigoree	430	1	.....	1	3	1	3	9
Bhaugulpore	162	......	......	......	1	......	1	2
Darjeeling	275	......	......	1	......	......	2	3
Hazareebaugh	179	......	......	......	1	......	1	2
Dinapore	16,120	15	4	78	31	3	55	181
Segowlie	395	......	......	6	......	2	9	17
Benares	4,065	13	10	68	8	5	8	112
Chunar	412	2	.....	.....	4	1	9	16
Goruckpore	1,014	......	.....	7	2	.....	5	14
Fyzabad	4,560	......	......	7	2	3	10	22
Lucknow	10,920	4	1	62	10	7	30	114
Seetapore	4,144	......	1	57	7	.....	18	83
Futtehgurh	7,638	.....	8	82	3	1	2	96
Cawnpore	30,933	23	4	504	6	4	142	683
Banda	732	......	......	4	2	......	12	18
Allahabad	3,000	1	.....	22	3	......	6	32
Nagode	2,095	....	......	25	......	3	14	42
Shahjehanpore	5,456	3	9	59	19	6	19	115
Bareilly	3,126	......	2	29	8	2	7	48
Moradabad	516	....	......	....	....	.....	.....	......
Raneekhet	Not stated.	......	......	12	12	1	8	33
Almorah	747	....	.....	6	3	....	6	14
Nynee Tal	500	.....	......	6	2	....	3	11
Landour	1,291	.....	.....	2	......	......	1	3
Chuckrata	1,844	......	.....	23	11	6	11	51

Statement showing the Deaths from different causes, &c.,—continued.

CANTONMENTS.	Average Strength of the resident population.	CAUSE OF DEATH.						Total Deaths of the year.
		Cholera.	Small-pox.	Fever.	Bowel Complaint.	Accidents and violence.	All other causes.	
Deyrah	1,710	......	......	8	......	......	4	12
Roorkee	1,131	......	......	17	6	1	7	31
Meerut	35,194	1	5	640	32	3	410	1,091
Delhi	Not ascertained.	......	......	146	1	3	109	259
Muttra	3,936	......	......	36	6	2	16	60
Agra	26,341	1	3	248	78	17	113	460
Morar	6,843	......	......	71	11	4	15	101
Jhansie	2,370	......	......	35	4	......	13	52
Nowgong	5,143	......	......	60	1	1	31	93
Saugor	14,238	......	......	168	9	2	58	237
Jubbulpore	15,321	......	......	196	27	7	103	333
Puchmurree (11 months)	1,677	......	......	21	......	1	4	26
Umballa	24,560	......	3	358	46	18	243	668
Dugshaie	1,686	......	......	27	......	5	14	46
Kussowlie	1,538	......	1	20	6	2	11	40
Subathoo	4,521	......	......	41	1	......	17	59
Jutogh (10 months)	425	......	...	1	1	2	......	4
Jullundur	11,009	......	1	98	2	5	90	196
Ferozepore	14,345	......	......	131	5	4	82	222
Jhelum	1,471	......	......	11	2	......	12	25
Mooltan	7,647	......	......	48	21	......	17	86
Sealkote	10,000	......	......	47	2	1	30	80
Kangra	46	......	......	1	......	......	......	1
Dhurmsalla	909	......	......	21	......	......	10	31
Bukloh	625	......	......	13	2	......	20	35
Umritsur	134	......	......	1	......	......	......	1
Meean Meer	8,462	......	......	106	25	5	33	169
Rawul Pindee	7,140	......	7	217	45	1	52	322
Campbellpore (9 months)	968	......	......	7	......	1	5	13
Tollagunj	1,037	......	......	3	......	......	11	14
Attock	498	......	......	4	......	......	5	9
Murree	362	......	......	......	2	......	1	3
Nowshera	2,573	......	2	52	6	5	28	93
Peshawur	13,526	......	1	139	20	5	82	247
Murdan	1,643	......	......	4	1	1	16	22
Abbottabad	2,896	......	......	9	4	2	31	46
Kohat	2,374	......	......	21	9	......	35	65
Bunnoo	1,719	......	......	29	9	1	23	62
Dera Ghazee Khan	1,329	......	......	30	1	3	40	74
Dera Ismail Khan	2,019	......	2	5	5	......	19	31
Rajanpore	2,220	......	......	14	2	......	7	23

Cantonment registration still unsatisfactory.

115. The registration of deaths within the limits of military stations does not receive that attention which it deserves. Little reliance can as yet be placed on the returns, and yet there is no point of sanitary interest and importance to which the attention of the Cantonment Committee could be more properly directed. The form of register, as pointed out in last year's Report, is somewhat defective, and I have, accordingly, submitted a revised form by which the details of registration among the native population of cantonments may be brought into unison with that already in force among the population generally, with effect from the beginning of 1873.

Cholera Enquiry. Registers of cases.

116. In pursuance of the Cholera Enquiry in India, which was suggested by the Army Sanitary Commission, and which was partially commenced in 1870, some registers of cases which had been treated in both civil and military hospitals were forwarded for submission to the Secretary of State. They were few in number, and had all been received from the Madras and Bombay Presidencies. In Bengal the orders on the subject had not been issued sufficiently early to admit of their being acted on in 1870, but this delay was of less consequence, as this portion of the country had been singularly free from the disease. When the few registers which were forwarded reached England, the Army Sanitary Commission brought to notice that they were very imperfect, and afforded insufficient data for comparison. Orders have, accordingly, been issued requesting that greater attention may in future be paid to the proper record of the facts of each case, and that for this purpose the columns should be carefully filled up. It was at the same time pointed out that a *post-mortem* examination could not be expected in every instance, but that the number of these examinations which could be undertaken must be left to the discretion of the medical officer. In future only such pages of the register as have been actually filled in will be forwarded, and these pages, received from all parts of India, will be bound and indexed in this Office for transmission to the Secretary of State.

Special local enquiry into Cholera in the Central Provinces.

117. The special local enquiry into Cholera in the Jubbulpore District, which was mentioned in last Annual Report as having been sanctioned by the Government, has since been commenced. Dr. Edis was selected to conduct it, and the general arrangements were devised by Dr. Townsend, the Sanitary Commissioner of the Central Provinces. Within the last few weeks, Dr. Edis has unfortunately been obliged to leave the country in bad health, and the future of the enquiry depends on whether the Medical Department can supply a well qualified officer for the work. No results have yet been obtained. Very few cases of Cholera have occurred within the area under observation, and the time has been too short to admit of much being done. The question is of much interest and importance; and as I still hope that the investigation may be continued in a satisfactory manner,* I shall here extract Dr. Townsend's account of the scheme as detailed in his letter to the Secretary to the Chief Commissioner of the Central Provinces, No. 148, dated 9th February 1872:—

> In continuation of my memorandum (forwarded with my letter No. 469, dated 19th October last) describing the plan on which it was proposed that the investigation into the causes of Cholera in the Jubbulpore District should be carried out, I have now the honor to report that I have gone over with Dr. Edis the five different localities mentioned in the memorandum as suitable fields for special investigation. Three of these localities, *viz.*, Jubbulpore, Sehora, and Murwara, we find well adapted for the object in view, but the other two, *viz.*, Patun and Bareilla, though in other respects possessing the required conditions, would be quite inaccessible in the rains. I am, moreover, of opinion, after inspecting the country, that four circles are as much as the officer conducting the enquiry can efficiently superintend during the monsoon; and, as the enquiry would be very incomplete if the observations of the state of the villages and of the surrounding country were not continued through the rains, I propose reducing the number of special circles to four. As the Sehora Circle includes several villages lying on the alluvial plain, a second circle on the same formation is scarcely needed; the circle which, in my former letter on this subject, I proposed to form round the town of Patun, will therefore be omitted. Instead of the circle which I proposed to form at Bareilla in the trap formation to the east of Jubbulpore, a circle will be formed at Bargi in the trap hills to the south of the Nerbudda, a locality which the high road to Nagpore renders accessible at all seasons of the year. The places now fixed upon as centres of the four circles to be kept under observation are Jubbulpore, Bargi, Sehora and Murwara:—

---

* Dr. Hutcheson has lately been appointed to continue the enquiry.

(1). The Jubbulpore Circle comprises the town and cantonment of Jubbulpore, the town of Gurha, the village of Goruckpore, and one or two other small villages lying within cantonment and municipal limits. The population of this circle is about 75,000.

(2). The Bargi Circle includes 10 villages. This part of the country is very sparsely populated, and the population of this circle is not more than 3,000.

(3). The Sehora Circle includes the town of Sehora and 14 of the surrounding villages. The population of the circle is about 10,000.

(4). The Murwara Circle includes the town of Murwara and nine of the nearest villages. The population of the circle is about 9,500.

(5). The total aggregate population of the four circles placed under special observation may be estimated at about 100,000, of which 85,000 are resident in the towns, and 15,000 distributed in 30 villages.

Four hospital assistants were placed at my disposal for this work by the Deputy Inspector General of Hospitals, Saugor Circle, and a fifth has been transferred from my Office. As, however, the number of circles has been reduced to four, one of the hospital assistants has been replaced at the disposal of the Deputy Inspector General. The remaining four hospital assistants have been distributed, one to each of the four circles. It will be their duty by frequent periodical inspections of the villages in their circles to watch the variations in the health of the inhabitants, to note the first appearance of Cholera, Small-pox, or other epidemic, and the periods of increase and decrease in the prevalence of Fever. They will also, at each visit, note and report to the Assistant Commissioner conducting the enquiry the state of the villages as regards cleanliness and the quantity of water in the wells and other sources of supply.

Few of the villages that have been selected are more than three miles from the central stations,—many are not more than one mile distant. In the dry weather, therefore, the hospital assistant will be able to visit every village of his circle once a week. In the rains, perhaps, he may not be able to visit them so frequently, but it is a point of great importance in the enquiry to ascertain the condition of the villages during the rains, and on this account, in selecting the villages, preference has been given to those that are within a short distance of the main roads. But the inspection of villages even a mile off the main roads will be a work of considerable difficulty after the rains have set in, and to enable Dr. Edis to ascertain for himself by personal inspection the condition of the villages at that season of the year, it is necessary that he should have an elephant at his disposal during the four months from July to October. The elephants attached to the Forest Department are not, I believe, in use in the rains, and perhaps an arrangement might be made to let Dr. Edis have the use of one occasionally.

A list of the selected villages has been forwarded to the Deputy Commissioner, and he has been requested to direct the tehsildars and chief constables to afford the native subordinates all the assistance in their power, more especially by informing the malgoozars of the object of the enquiry, and inducing them to render willingly all the information required from them concerning the health of their villages. The tehsildars of Sehora and Murwara and the chief constable at Bargi will also exercise a general supervision over the conduct of the hospital assistants stationed at those towns, and report to the Assistant Sanitary Commissioner if they do not visit the villages of their circles with due frequency. The district authorities have been requested to furnish Dr. Edis with the following Statements and Returns:—

(1). A Statement of the villages reporting to each station-house and out-post, showing the population of each out-post.

(2). A Statement showing the details of the population of each selected village and of each mohulla of the central towns of the circles.

(These Statements will be required as soon as the statistics of the late census are available.)

(3). A monthly Nominal Return of deaths occurring in the selected towns and villages.

(4). A weekly Return of cases of Cholera reported at each station-house and out-post.

(5). A weekly Return of cases of Small-pox.

(If either of these epidemics become prevalent in the town and cantonment of Jubbulpore, daily Returns will be required.)

(6). Weekly Returns of patients treated at the several dispensaries in the district.

(7). Weekly Meteorological Registers.

(As the general work of the enquiry will oblige Dr. Edis to be absent from the station for long periods, he cannot superintend the Meteorological Register. This work must, therefore, rest, as heretofore, with the Civil Surgeon, and as an accurate record of the meteorology of the different seasons is essential to the success of the enquiry, I have no doubt Dr. Rice will supervise the work of the clerk who records the observations as closely as his other official duties will permit.)

Printed forms for the Returns required will be furnished from this Office.

A monthly nominal register of deaths and daily returns of cases of Cholera and Small-pox occurring in the cantonment bazars and among the troops, both European and Native, will be required, and I purpose applying to the military authorities for them through the Sanitary Commissioner with the Government of India.

The duties of the Assistant Sanitary Commissioner must, I think, for the present be strictly confined to the work of the enquiry; he will not be able to undertake the superintendence of any sanitary arrangements within the town or station, and it is not desirable that he should, in any way, interfere with the duties of the Civil Surgeon in the latter's capacity of health officer of his district; but if in the course of his investigations, Dr. Edis should become acquainted with any circumstances affecting the health of the people, which, in his opinion, call for immediate action, he will bring them to the notice of the Deputy Commissioner.

As this enquiry will extend over a period of two years, and it will not be possible to arrive at any definite conclusions with regard to the conditions that affect the prevalence of the different forms of disease among the people in a shorter period, it is not advisable that any detailed report should be required from Dr. Edis until the enquiry has been brought to a close; but in order that the Sanitary Commissioner may be in a position to keep the Administration informed with regard to the progress of the work, Dr. Edis will submit to this Office, at the end of every quarter, a short summary of his proceedings, and at the same time report generally on the health of the people, and the diseases which have chiefly prevailed.

Should Cholera or Small-pox become prevalent, a more detailed record of the facts which have been ascertained regarding the origin and spread of the epidemic should be given.

Relation of sub-soil moisture to Cholera. Dr. D. Cunningham's observations.

118. The registers of sub-soil water level in military cantonments which were commenced in 1869 were discontinued in the end of 1871. The period during which these observations were taken, unfortunately for the investigation, was characterized by a singular immunity from the disease. In certain civil stations they are still continued, but in many of them the data have been imperfect, and in others manifestly incorrect. On a careful scrutiny of all the registers, Dr. Douglas Cunningham has furnished me with a report on the subject, and I shall here extract some portions of it. He remarks:—

The only conclusion which can be at present derived from an examination of the data, appears to be that, in all those districts in which a momentous rise in the number of deaths from Cholera occurred at the close of 1871, this rise coincided with a period of subsidence of water-level from the unusual elevation to which it had attained at the close of the rains of that year. The districts in which this occurred were Fyzabad, Lucknow, Goalparah, the 24-Pergunnahs, Howrah, Hooghly, Moorshedabad, Rajshahye, and Maldah.

The facts regarding these stations are favorable to the soil theory, as they indicate the existence of a period of considerable fluctuation in the amount of moisture present in the soil, coincidently with a large development of the local causes favoring prevalence of Cholera. With the small number of data at present at our disposal, it is, however, impossible to arrive at any definite conclusion regarding the correctness of the views expressed in the soil theory.

A correct indication of the actual conditions of soil moisture throughout an entire district cannot be furnished by the registrations of the water-level of a well in a single station in one part of it. In order that the indication should be correct, it would be necessary to know the variation in the nature of the soil throughout the district, so that the effects likely to be produced in it in different places, by the addition or removal of a given amount of water, may be properly estimated. Even within very narrow limits, the nature of the soil may vary so greatly as to render it impossible from mere figures of water-level, rain-fall, and Cholera mortality, independent of an actual knowledge of the nature of the soil itself, to determine whether the facts support such a theory as that of Professor Pettenkofer.

A more striking example of the truth of the fact stated above could not be furnished than by the Cholera of Rajmehal in the years 1870 and 1871. In this small station there was a violent epidemic of Cholera during the months of March and April 1870, and a slighter outbreak in the end of September and beginning of October 1871. With figures of mortality from Cholera and of water-level alone to refer to, it might well be supposed that the facts, in regard to this station at all events, were directly opposed to the soil theory, for Cholera here in a small station situated on the alluvial bank of the Ganges in the former year (1870) occurred when the water-level was at its lowest, whilst in the latter (1871) the outbreak took place at the end of the rains of a season in which (according to the report on the subject furnished to the Inspector General of Jails, and kindly placed by him at my disposal) the fall of rain had been very excessive, and at a time when "the level of the sub-soil water was about four feet five inches below the surface in Naya Bazaar, and about five feet five inches in Cassim Bazaar," and the disease first made its appearance in an interval of slight subsidence between two occasions on which the river "rose a cubit higher than the highest flood-mark of 1866." The truth is, however, that a stronger confirmation of the actual existence of the local influence of the soil, maintained to exist by Professor Pettenkofer, could hardly have been devised than is supplied by the facts of the case in question, for the distribution of the disease within the limits of the station varied most remarkably in the two outbreaks under consideration. There is a corresponding variation in the nature of the soil within the station, and on each occasion that locality was affected which, according to the soil theory, was locally predisposed to the development and spread of the disease in it. In the spring of 1870 the disease was almost entirely confined to Cassim Bazaar, one of the two bazaars in the station; whilst in the autumn of 1871 the distribution of the disease is reported to have been reversed, 22 cases occurring in Naya Bazaar, and only 2 in Cassim Bazaar. It is noteworthy that Professor Pettenkofer remarks (at page 84 of his work on "Cholera in India," published in May 1871), in reference to the epidemic of 1870, that in his opinion "Naya Bazaar would be liable to a so-called monsoon Cholera."

These facts regarding Rajmehal appear to be worthy of record, as it is possible that they may afford a clue towards an explanation not incompatible with the soil theory of the rhythm of the prevalence of cholera in districts, such as Maldah and Berhampore, in which the maximum of Cholera occurred at opposite times of year in 1870 and 1871, as well as of that in others, such as Dinagepore, in which there appears to be a double rhythm for 1871.

There are no mortuary statistics for the Moorshedabad District prior to July 1870, but as a fact Cholera was very prevalent in the town of Moorshedabad in April and May 1870, so that there must have been an almost reversed rhythm of Cholera for the district in the two years under consideration. It would be very desirable to have accurate information regarding the precise localisation of the disease in different years, and at different times of the same year, in the district of Moorshedabad, seeing that there are very well-marked variations in the nature of the soil within its limits. The existence of these variations is very clearly indicated in the Appendix to a Drainage Report on Berhampore by Mr. Wickes, the Executive Engineer of the District, a copy of which was kindly furnished to me by the author. Mr. Wickes says:—"The district of Moorshedabad (of which Berhampore is the sudder station) is divided into two somewhat unequal portions by the river Bhagiruttee, which flows through it in a south-easterly direction. The country on the right bank is undulating and generally well raised above the highest flood-level of the river, and the soil in its composition resembles the plains of Upper Bengal. The fall of this portion is from north-west to south-east. Directly the river is crossed, the change is unmistakably marked. The surface of the country is generally below high flood-level, and the soil is composed of sand mixed with clay, and is in fact identical with that of the Gangetic Delta. The undulations disappear, and a flat country takes their place, &c."

The complexity of the subject, and the consequent need of accurate data of localisation, are greatly increased when we have to consider districts entirely, or almost entirely, on the alluvium of the delta, as the variations in the soil-conditions are there much more localised, so that there is a constant alternation of localities which, as regards their conditions of soil moisture, are directly under the influence of the body of water entering the delta by the rivers, with others which are comparatively independent of such influences and almost entirely dependent on local rainfall. The Presidency and Alipore Jails are localities which apparently afford examples of this fact, as appears in the following Statement, showing the water-levels on the first of January and last of December 1870 in the wells under observation in these jails, together with the river-levels registered at the same dates in the Bhaghiruttee at Berhampore, and at low-tide in the Hooghly at Kidderpore docks, as well as the total rainfall at Calcutta compared with the average:—

DATE.	Alipore Jail.	Berhampore Gauge.	Kidderpore low tide-level.		Presidency Jail.	Rainfall.
			Day.	Night.		
January 1st	14·3½	3·2¾	4·2	4·2	8·7½	Total 62·00
December 31st	13·3¼	6·6½	4·10	4·10	9·4	Average 66·04
Difference	1·0¼+	3·3¾ +	0· 8+	0· 8+	0·8½—	4·04 —

On comparing these figures we find that the water-level at Alipore was 1 foot 0¼ inch higher on the 31st December than on the 1st January, whilst that at the Presidency Jail was 8½ inches lower at the former than at the latter date. The apparent inconsistency of this disappears when the figures of river-level and Calcutta rainfall are taken into consideration, as the former indicated by the gauges at Berhampore and Kidderpore was higher at the end than at the beginning of the year, whilst the latter only amounted to 62·00 inches, *i. e.*, it was 4·01 below the average of 66·04 inches. The registrations of the gauge at Berhampore have been selected as affording the best available source of information regarding the amount of water coming down by the river into this portion of the Gangetic Delta, and the information derived from them is checked by that afforded by the tide registrations at Kidderpore. In order to show that the higher level of low tide at the end than at the beginning of 1870 was not accidental, but that it coincided throughout with the descent of an increased body of water into the delta, I subjoin the following Statement showing the levels on the first and last of each month during 1869 and 1870 at Kidderpore, and during 1870 at Berhampore.

Station.		Days of month.	January.				February.				March.				April.				May.				June.			
			Day.		Night.		Day.		Night.		Day.		Night.		Day.		Night.		Day.		Night.		Day.		Night.	
			Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
Kidderpore Docks ...	1869.	1	3	6	3	6	3	6	3	6	2	6	2	6	3	0	3	0	4	0	4	0	5	6	5	6
		31	3	0	3	0	2	6	2	8	2	6	2	6	3	6	3	6	6	0	5	6	6	6	6	6
	1870.	1	4	2	4	2	4	0	4	0	4	0	4	0	3	6	3	6	3	6	3	6	4	4	—	
		31	4	2	4	2	4	3	4	3	3	6	3	6	3	6	3	6	4	4	4	4	5	6	—	
Berhampore ...	1870.	1	3′	2¾″ +			1′	5½″ +			0′	5″ +			0′	2¾″ —			0′	5″ —			0′	4″ +		
		31	1	5¾ +			0	5½ +			0	2½ —			0	4¾ —			0	4½ +			6	10 +		

Station.		Days of month.	July.				August.				September.				October.				November.				December.			
			Day.		Night.		Day.		Night.		Day.		Night.		Day.		Night.		Day.		Night.		Day.		Night.	
			Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
Kidderpore Docks ...	1869.	1	7	0	7	0	9	3	9	3	9	6	9	6	10	0	—		8	0	8	0	5	6	5	6
		31	8	2	8	2	9	6	9	6	10	2	10	2	8	6	8	6	5	6	5	6	4	4	4	4
	1870.	1	5	6	5	6	7	9	7	9	10	6	10	6	10	6	10	6	8	5	8	5	6	6	6	6
		31	7	6	7	6	10	3	10	3	10	6	10	6	7	6	7	6	6	0	6	0	4	10	4	10
Berhampore ...	1870.	1	8′	0″ +			25′	2″ +			27′	11¼″ +			24′	4″ +			20′	6¼″ +			10	7¾″ +		
		31	24	11 +			27	11 +			24	4 +			20	1½			10	10¼ +			6	6½ +		

The average low tide-level of December 1870 was 9·2 inches higher than that of January.

The value of the tide-levels as indices of the conditions of soil-moisture in localities such as Alipore was first pointed out by the late Dr. Fawcus in the Administration Report of the Jails of the Lower Provinces for the year 1869. Professor Pettenkofer, in his recent work on Cholera in India, has, in reference to this, indicated that the tide-levels, in so far as they are dependent on the sea, cannot be regarded as affording any information as to those conditions of soil-moisture which in his theory are considered to render a locality susceptible to, or exempt from, Cholera. He says :—"Fluctuations of the water-level in the soil are only of importance, if they are dependent on, and proceed from, the change in the saturation of the local overlying porous strata, if they are, so to speak, dial and hands for the influence of the rains. In so far as the movement of ebb and flow is dependent on the influence of the moon, and not on the saturation of the soil from above, no influence on the local and seasonal occurrence of Cholera is to be looked for from them." This, however, cannot prevent the general level of low tide taken along with the levels of the main drainage channels of the delta from affording a very fair indication of the body of water coming down through the delta and permeating the porous soil in all directions.

Even allowing that the water-levels of individual wells cannot be regarded as affording indications of the precise conditions of the soil throughout the districts in which they are situated, there can be no doubt, were an accurate series of observations carried out by means of such wells during a period of years, coincidently with approximately correct registration of the prevalence of Cholera and its localisation at various times, and of the amount of rainfall of the individual years, that the data thus obtained would, when compared with one another, render it easy to determine whether the prevalence of Cholera coincided with the presence of certain soil-conditions, or whether no such correspondence existed.

The soil theory endeavors to prove the coincidence of certain soil-conditions in given localities with prevalence of Cholera on the one hand, and with its absence or small prevalence on the other; but it does not seek to establish the existence of any absolute condition of water-level as necessarily coincident with the presence or absence of the disease. It would be adverse to the theory could it be shown that there was no correspondence between the conditions of soil-moisture in given localities, and their susceptibility to or exemption from Cholera in individual years; could it be shown that in one and the same place Cholera was equally prevalent in years, or at different times of year, in which the conditions of soil-moisture were opposed to one another, but it is no argument against the theory that Cholera should be found prevailing at different seasons in different localties, however near these may be to one another in the same district, or even as at Rajmehal in the same station.

The materials as yet at our disposal are far too scanty to allow of any general conclusions being derived from them. Pettenkofer points out that we cannot expect to be able to trace such simple and constant relations between soil, soil-moisture, and Cholera as those which exist between the temperature of the air and the expansion of mercury, and has always insisted that certain soil-conditions are only one of the many factors necessary in the complex processes which result in the development of Cholera in any locality.

Seeing that definite conclusions cannot be arrived at without the patient accumulation of data regarding a series of years, it would be much to be regretted were observations on soil-moisture abandoned, because no startling results have as yet appeared manifest from them. The observations have most important bearings on other diseases besides Cholera, and the subject of soil-meteorology in general is one which has been almost entirely neglected hitherto, and which is only now beginning to attract the attention which it deserves.

It appears to be unnecessary that observations should be carried out at any great number of stations; accurate data from one or two in each province would be quite sufficient to afford the desired information, as were stations, typical of the various conditions of soil and climate throughout the Presidency, selected as the sites for observations, the conclusions derived from them might, with proper precautions, be extended to the rest of the country.

What is really wanted is accuracy and care in the registration of the data of water-level, rainfall, and prevalence of Cholera. In regard to the returns of mortality from Cholera, it would be very desirable that accurate data regarding the distribution of the disease at various times in various parts of the station and district furnishing the returns of water-level should be registered, for it is only by means of such data of localisation that the coexistence of certain soil-conditions and prevalence of Cholera can be determined. Should it be found that Cholera, as a rule, prevails at certain seasons in any station, and at others in other localities in the same district, it will then be time to acquire definite information regarding the presence of corresponding variations in soil-conditions.

Special investigation into Cholera by Drs. Lewis and Cunningham continued in Calcutta.

119. Since the issue of last Report, the special Cholera Enquiry entrusted to Drs. Lewis and Cunningham has been zealously continued. The disease, although comparatively trifling, has been more or less present in Calcutta throughout the year, and it was therefore considered advisable that they should remain at the Presidency. An ample supply of material has always been available, and has afforded a more satisfactory field for observation than could have been furnished by any epidemic where the circumstances are apt to lead to hurried observation. The confusion which attaches to the pathology of Cholera may indeed, to some extent, be explained by the hasty examinations

which were in a measure necessitated at such times of unusual prevalence of the disease. In Calcutta the facilities for continuous patient investigation have been great, and thanks to Dr. Ewart, the Surgeon of the General Hospital, every advantage could be taken of them. His assistance has at all times been of great value.

Special points treated of in their report.

120. The aim of the enquirers has been chiefly directed to ascertain whether there is microscopical or physiological evidence of the existence of any peculiarity in the blood or in the discharges of persons suffering from Cholera. For the elucidation of this important point, careful observations have been made of these fluids, both in cases of Cholera, in healthy persons, and in those who were laboring under other diseases. In an appendix I hope to be able to give their report, and, whether the results should be positive or only negative, there can be no question that their labors have been conducted with unflagging zeal and with the one desire of ascertaining the truth. Their report is the result of the conjoint observations and conclusions of both observers, and is therefore of peculiar value, as every doubtful point has been re-examined, and the whole enquiry has thus the advantage of having been worked out by two independent authorities, while, at the same time, the results have been checked by their combined action. Researches, such as these, have a direct bearing on many of the great questions of the day relating to the causation of disease,—questions which require very painstaking investigation, and in regard to some of which generalizations would seem to have been in some cases too hastily formed.

Other matters under investigation.

121. Other matters which have engaged their attention are not yet ripe for report. Among these may be mentioned a systematic examination of the microscopic elements of air which has been carried on for several months in particular localities both when Cholera was absent and when it was present. The variations in the temperature of the soil at different depths have been noted. Preparations have also been commenced for the chemical examination of the gases it contains, similar to those now being conducted in Germany; and these will be supplemented by others on the coincident occurrence of organic life in it at different depths. Dr. Cunningham's work in relation to Pettenkofer's theory has been already spoken of.

New form of Cholera Map for Provincial Sanitary Reports.

122. A new form of map to illustrate the annual history of Cholera in each Province has been approved of by the Government, and will be generally adopted. The reasons why the old form of map was found inconvenient were fully detailed in last Report. At the same time it was explained what information regarding Cholera can be well shown on such a map, and how this can be done with the greatest clearness. The form of map which has now been adopted will give the ratio of deaths from Cholera per 10,000 of the population in each registration circle and also the date on which the first case occurred in each. In a Tabular Statement, either on the margin of the map or immediately facing it, further particulars will be entered regarding the period of greatest prevalence, the number of villages in each rural circle, the number affected by Cholera, and other details which will greatly assist in the study of the facts.

Discussion regarding Cholera in Southern India.

123. A statement of the additions to our knowledge of Cholera, which have been made during the year, would be incomplete without some reference to the history of Cholera in Southern India, which has been the subject of very interesting discussion. To his Report on the progress of Cholera in the Madras Presidency during 1870, Dr. Cornish, the Sanitary Commissioner, added with much care a resumé of the information which he had been able to obtain regarding former epidemic invasions of Southern India. From these facts, which are of great importance, Dr. Cornish concluded that Dr. Bryden's views are incorrect, and that they fail to explain the history of Cholera in the Madras Presidency. To these remarks Dr. Bryden has replied in a very able paper in which he traces the connection between the invasion of Southern India by Cholera coincident with the repression of the south-west monsoon as indicated by a year of famine. The whole question is one of great interest, but I shall not discuss either the facts, or the different opinions founded on them, except to draw attention to the following remarkable passage in Dr. Cornish's Report:—

"The history of the epidemic advance of Cholera in 1818, as detailed in Scot's narrative, is, in point of fact, the history for all time of the mode in which the Peninsula and Southern India are invaded. In every new invasion there are sure to be some minor differences as to the rapidity of movement of, and the extent of country covered by, Cholera, but the main facts are unalterable. The broad truth in regard to invasion to be borne in view is, that the great body of Cholera which invades Southern India leaves its natural territory in Lower Bengal, by what Bryden terms 'the southern epidemic highway,' across the Central Provinces, and southward through the Deccan and Bombay Presidencies towards Madras territory, which in a longer or shorter space of time is occupied. Nor does Cholera terminate with the extreme southern limit of the Peninsula. In all true epidemic invasions, from 1818 down to 1870, it has been carried on to the neighbouring Island of Ceylon. In this southern progress of Cholera, a period of two years may elapse (as in the latest invasion) before the epidemic has travelled its southern course from Bengal to Ceylon, or, as in 1818, the whole journey may be completed in six or seven months. The epidemic of Cholera that left Bengal in the spring of 1818 reached Ceylon in January 1819; but, with all the facilities for rapid communication introduced during the last half century, we find that the great body of moving Cholera in the last epidemic invasion, which fell upon the Central Provinces in the spring of 1868, did not reach Ceylon until May 1870. A proper appreciation of this fact will, I think, indicate that in the movement of Cholera from its endemic home, there are other agents than human intercourse at work." The facts that Cholera does not invade Madras by the seaboard, although there is constant and direct communication with the endemic area of the disease; and that the epidemic of 1868, when roads and communications generally had much improved, did not reach Ceylon till 1870, while in 1818 the whole journey was completed in a few months, are strongly opposed to the theory that human intercourse is the only, or even the great means by which the disease is disseminated.

Modifications in cottage barrack for the hills.

124. The orders relating to the accommodation or other matters connected with the health of the troops, which have been issued since last report, have been comparatively few. In cottage barracks for the hills, it has been decided to retain the verandah on each side, to allow 59 superficial feet per man, which, with a height of 14 feet, will give 826 feet of cubical space. With free means of ventilation these measurements are considered ample. In hospitals in the hills, 77 superficial feet will be allowed, which, with a height of 14 feet 3 inches, gives 1,300 superficial feet per bed. Recently I proposed, in order to secure ample space for each bed, that in dormitories in the hills the following measurements should be adopted—6 running feet of wall space per man, width of ward 20 feet, height of ward from floor to wall plate from 12 to 14 feet according to the elevation of the locality; and instructions have been issued that these should be accepted. This arrangement will prevent the beds being too close to one another, an evil which is not necessarily obviated by regulating the superficial area, unless at the same time a proper amount of wall space is secured. The above measurements will allow 60 superficial feet for each man, guarded by 6 feet of wall space, while the cubic allotment will vary from 720 to 840 feet.

Minor alterations in other matters connected with accommodation for the troops.

125. The minor alterations which have been ordered, with respect to the standard plans of barracks and auxiliary buildings, are unimportant. In the construction of plunge-baths the water is to be admitted from below instead of from above, so that it may escape from the top instead of at the bottom. For hospital floors, good, hard stone-flags, closely joined in Portland cement, have been recommended, wherever such materials can be conveniently obtained. Iron will be tried for roofing barracks; it is believed that it will afford an excellent covering to buildings in this country, and that the fear that it will prove very hot is not likely to be realized if a good ceiling be provided underneath. Orders have also been issued regarding provision of hospital accommodation for sick prisoners. As regards urinaries for British Troops, it has not been deemed necessary to issue any standard plan; the matter will be determined according to local circumstances. In latrines the preference has been given to earthen floors.

Comparative temperature in old and new barracks.

126. Observations on the comparative temperature of the old barracks and of the upper and lower storeys of the new barracks have been continued, but without any very definite result. In many cases the returns are evidently incorrect, and no reliable conclusions can be drawn from them. So far as the records may be trusted, there appears on the whole to be but little difference between the temperature of the three classes of rooms; but as every thing is being done to remedy any discomfort in the new barracks arising from want of sun-screens and other defects which were in some instances complained of with good reason, and as it has been determined to build no more double-storeyed barracks except at certain stations where they are really required, it does not appear that any practical good can be gained by prolonging these thermometrical observations. They have accordingly been discontinued.

Proposed substitution of thermantidotes for tatties.

127. In connection with the temperature of barracks, it may be mentioned that a proposal to substitute *thermantidotes* for *tatties* has been under consideration. The expense of making up tatties is very great, and as they are of no use except when the hot west wind blows, they are often of little or no benefit. On the other hand, a thermantidote or fanner, to the sides of which small thin tatties are attached, and through which the hot air is drawn, cools the room throughout the hot season, and even in the rains causes a current of air which, in the steamy still days of that time of year, is extremely grateful. Moreover the thermantidote can be worked without the splashing and wetting of the floor around, which always more or less attends the watering of a tattie. For these reasons, in the Upper Provinces, tatties are comparatively little used in private houses, and it seemed that they might with advantage give place to thermantidotes in barracks. At first it was believed that the arrangement would at the same time be economical, but the large increase of cost which would be occasioned presents a difficulty in the way of the change.

New scale of soldiers' bedding.

128. By order of the Government in the Military Department, No. 1077, dated the 12th December 1871, a new scale of bedding has been prescribed for British Troops. This will now consist at first issue of—

1 thick English blanket, 7 × 4 feet, and weighing 3 lbs. 12 oz;
1 pair cotton sheets, 7 × 4 feet;
1 cotton suttrunjee, 6 × 3 feet;

an additional blanket and suttrunjee being allowed triennially, and a cotton sheet annually. To distinguish the barrack and hospital blankets the former will be colored brown and the latter white. For each iron barrack cot will be allowed—

2 canvas palliasse covers or cases.
2 canvas pillow-cases.
1 leather strap with buckle.

The stuffing for the palliasse and pillow-cases will consist, at the stations in Bengal Proper, of 21½ lbs of coir per bed, to be cleaned, thoroughly teased and renewed as necessity may hereafter indicate. At all other stations the stuffing will consist of 24 lbs of straw to be renewed quarterly. The palliasse and pillow-covers will be washed once every three months under regimental arrangements. Whenever additional bedding is considered necessary by the medical authorities, extra blankets may be issued as a temporary arrangement.

Proposal to use aloe fibre for stuffing mattrasses abandoned.

129. It was for some time believed that the aloe plant, which grows luxuriantly in many parts of the country, might yield a fibre which would form an excellent material for stuffing soldiers' bedding; for, in addition to being strong and easily cleaned, it appeared to have the valuable property of being elastic. But further enquiry has shown that this impression was to a great extent incorrect, and the idea of employing this fibre for the purpose indicated has therefore been altogether abandoned.

Rations with few exceptions good.

130. There is ample evidence to show that the rations issued to the troops were generally excellent. From the Statement submitted to the Government by the Commissary General, it appears that in the year 1871 the rejections of bread equalled only ·15, of beef ·06, of mutton ·12, and of potatoes ·06 per cent. Of other vegetables no rejections whatever took place. The sanitary reports of the Cantonment

Committees, to which reference will be made in a subsequent paragraph, bear testimony to the fact that, with very few exceptions, the rations were good.

Dr. Lewis' Report on cyst-infected meat.

131. The instances in which beef tendered for the use of the troops was found to contain cysts, continued to be rare. A few specimens were obtained for Dr Lewis' examination, and the result of the investigation which he was able to conduct during the intervals occurring in the course of his more special work is contained in his report, which will be found in the Appendix. Independent of the scientific interest which attaches to the subject, this report is of much practical value in showing that, with very simple precautions in the manner of cooking, this cysted meat may be used without producing any ill results. The means which Dr. Lewis employed for arriving at definite and decided conclusions on this point are very ingenious, and the whole investigation bears evidence of having been conducted with much care. The micro-photographs with which the report is illustrated are the first of the kind which have ever been produced in India, and reflect great credit both on Dr. Lewis and on Dr. Dobson, of whose valuable assistance Dr. Lewis makes prominent mention. Thanks to the Surveyor General, and especially to his Assistant Captain Waterhouse, these micro-photographs have been heliotyped with considerable success, a process which also is quite new in this country. The facilities for producing them are not sufficient to admit of their being employed to illustrate this report; but this is not to be regretted, as the lithographs have been executed in such an admirable manner.

Dr. Lewis' Report on Chylous Urine.

132. In connection with Dr. Lewis' investigation into these cysts, mention may also be made of his very interesting paper on an obscure disease known as "Chylous Urine," which will also be found in the Appendix. In his "Report on the microscopic objects found in cholera evacuations," which was submitted to the Government as an Appendix to the Sanitary Report for 1869, Dr. Lewis mentioned that in the urine of a person suffering from this affection he had discovered a peculiar round worm which he figured and described. Since then he has had many opportunities of confirming this observation, and of satisfying himself that the presence of this worm in the urine is a constant attendant on the disease. But the paper which he has now furnished communicates the still more interesting and unlooked-for discovery that in persons suffering from chylous urine, this peculiar worm is not confined to the urine, but exists also in very large numbers in the blood—an observation which is of the highest importance, and shews that the local symptom is but a mere indication of a general condition which has hitherto been altogether unknown.

New scale of diet for military prisoners.

133. In the end of 1870 a new scale of diet was experimentally adopted in several of the military prisons. The change was introduced on the ground that the new diet had been used with great success, in the case of European prisoners, in the Presidency Jail, and it still continues to be employed there with excellent results. The experience of the new diet in the military prisons where it was tried was not satisfactory; the men lost weight, and the medical officers were strongly of opinion that the amount of food allowed was insufficient to support them in a good state of health. A new scale as noted underneath has now been sanctioned. It is to be noted however, in explanation of the discrepancy between the results obtained at the presidency and in the military prisons, that owing to some mistake the scale which was tried in the latter was not really the same as that which had been ordinarily used in the former, but was a much lower diet intended only as a punishment for refractory convicts, and was even then had recourse to only as a temporary measure :—

Scale of Diet for Military Prisons.

ON SUNDAY, TUESDAY, AND FRIDAY.

Breakfast.	Supper.	Dinner.
8 ozs. bread. 8 „ milk. 2 „ soojee. 1 oz. sugar.	As for breakfast.	8 ozs. meat without bone on Sunday and Friday to be fried with one lb. potatoes. On Tuesday 1 lb meat with bone to be made into soup with 4 ozs. barley and onions and 12 ozs. potatoes.

ON MONDAY, WEDNESDAY, THURSDAY, AND SATURDAY.

Breakfast.	Supper.	Dinner.
1 pint tea. 2 ozs. milk. 1 oz. sugar. 8 ozs. bread.	As for breakfast.	9 ozs. peas-meal. 1 pint milk.

A daily allowance of ½ oz. of salt.
After two months' imprisonment, the meat diets to be increased from three to four days in the week.

Information regarding insanes.

134. In order to afford more complete information on insanity, orders have been issued requiring a half-yearly report of the European insanes, both military and civil, who may in future be sent to England for further treatment. The etiology of mental disease among the troops serving in India presents a very interesting and important field of inquiry which has not received the attention which it deserves. The effects of excess on a weakened constitution coupled with exposure, the relation of climatic influences of syphilis or of hereditary taint, are all points on which information is specially desired. Such particulars can be furnished by the medical officers under whose care the cases come, and the records may be so arranged as to form a complete history of each up to the time of reaching England. By this means a large amount of information may be ultimately collected.

Eighth Report on water analyses.

135. The eighth Report of the analyses of waters in this Presidency contains an account of the water at twelve stations in the Upper Provinces, and a very interesting memorandum by Dr. F. Macnamara on the supply of Calcutta and Fort William. Of these he observes—" I am convinced that the Pultah works, with slight changes in the working details, will yield water which will compare favorably with that of the supply to any of the great English or Scotch cities, but that the Fort works, even if reconstructed, could not, taking the tanks as their source, yield any but a supply of inferior character, while the water which they at present yield is on most days fit only for watering the roads." The results at the other stations may thus be summarized:—

Kohat.—The main source of supply is a spring. Both this and the open channel in which the water passes are subject to all manner of contamination. Naturally it is of excellent quality.

Bunnoo.—The arrangements here are equally objectionable. The water derived from the Koorum river flows through the station in the same unprotected manner.

Bukloh—Is abundantly supplied with good water, the main reservoir being connected with the spring by means of an iron pipe.

Puchmurree.—Water naturally good, but requires better protection.

Jubbulpore.—Water reported wholesome and free from known impurities.

Dalhousie.—Water good and abundant, but the means of distribution defective.

Dhurmsalla and Bhagsoo.—Water naturally excellent, but the mode of supply objectionable.

Kangra.—The water of the river Boneyr excellent, but is little used. That of the springs good, but not sufficiently protected.

Kussowlie.—Water abundant and naturally good, but sufficient attention is not paid to the protection of the spring and of the reservoir attached to it.

Subathoo.—Similar remarks apply to this station where the water is further exposed to danger by the presence of a filthy village immediately above the spring.

Dugshaie.—Water abundant and good, but the distance from which it is obtained entails a heavy cost and an inadequate supply. The surroundings of the cistern also require more attention.

Further analyses for the present stopped.

136. In conjunction with Dr. Parkes, Dr. Augus Smith, and other authorities in England, a very complete scheme for analyzing water had been prepared by Dr. Macnamara for general introduction throughout India. It appeared to the Government however, as mentioned in last Report, that in military cantonments no further analyses were required. The waters of all cantonments had been already examined, and defects had been pointed out; what was required was not further analyses, but practical measures for removing the evils complained of. It has now been decided that if any analyses of waters in the towns or cities is wanted, it must be done at the expense of the local Government or Administration concerned.

Improvements in water-supply.

137. The analysis of water under Dr. F. Macnamara's able management has, no doubt, done much good, not only in collecting together many interesting facts, but also in calling prominent attention to the many defects under which the supply in most stations labors, by means of which a water in many cases pure and wholesome becomes contaminated for want of the simplest precautions. The whole question of water-supply to the troops has engaged the earnest attention of the Government, and although so much progress towards the construction of great works has not been made as was hoped for, many measures of great importance to this end have been initiated. Questions relating to the water-supply of many cantonments have been under discussion, and I shall here state briefly what has been done in each case:—

Fort William.—On enquiry it appeared that the cost of laying on the Calcutta water would involve a first outlay for fittings of Rs. 15,000, and an increased charge of nearly Rs. 23,000 a year. Taking into consideration the remarkable health of the troops in the garrison of late years, it appears that there are other improvements which are more urgently required.

Alipore.—Here also the proposal to lay on Pultah water for the Native Regiment was negatived—*first*, because the outlay would have cost about Rs. 50,000, and *secondly*, because there was no security that the supply would be continued owing to the increased demand for the water in Calcutta. The tanks are being improved. This work, which includes arrangements for defending the water from impurities, will soon be completed.

Barrackpore.—A project for laying on the Pultah water is being prepared.

Puchmurree.—Orders are in force for defending the water from impurity, and conservancy rules strictly enforced.

Subathoo.—The dirty huts over the spring have been removed.

Dugshaie.—An estimate has been called for of the probable expense of boring for water.

Dalhousie.—Estimate called for of the cost of a covered masonry conduit.

Peshawur.—The estimate of the scheme described in last report amounts to 8½ lakhs for the city and cantonment. No orders have been issued, pending the final decision of the question of what force the garrison is to consist.

Murree.—Arrangements are being made for leading the water into the reservoirs by iron pipes; thence the water being drawn through taps will be carried in metal buckets.

Kohat.—Works are nearly completed by which the defects complained of will be remedied.

Bunnoo.—Two good wells are being sunk.

Kangra.—Orders have been issued to remedy the defects complained of.

Umballah.—Great expense has been incurred in attempting to sink an artesian well, but after going down 700 feet the project proved a failure. It has now been proposed to lead water into the cantonment from the Guggur river, a distance of 25 miles, but the want of Engineers delays the scheme.

Meean Meer.—A project to filter the canal water and deliver it by pipes to the barracks is in progress, and will, it is hoped, be completed by the end of the year.

Gwalior.—Political questions pending have prevented the issue of final orders on the scheme devised.

Provision of pumps and filter-beds for wells.

138. The orders of the Government, directing that in the lines of each European Regiment at least one well should be provided with a pump and filter-bed attached, have, I regret to say, been as yet but imperfectly acted on. Difficulty has been

experienced in many places owing to the depth of water from the surface, and the great liability of all such machinery to get out of order in this country has also proved a serious obstacle. At Lucknow one well has been fitted with a pump which works satisfactorily, but the quantity delivered is found to be inadequate, and additional pumps have accordingly been sanctioned. At Jubbulpore one well has been provided with a pump, but no fair trial of it has been made. At Rawul Pindee no well has been found to yield a supply sufficient to keep a pump going. At Meerut, in last hot weather, the two pumps erected got out of order. At Agra a well fitted with a pump gave way. At Roorkee a well and filter-bed have been prepared. At other stations arrangements are being made for giving effect to the orders. The above remarks will show what has been done, and the nature of the difficulties which have to be contended with. The importance of improving the water-supply of Allahabad as early as possible has been much insisted on. Now that all the works in the military stations in this Presidency have been placed under the direct control of the Government of India in the Public Works Department, there will, I trust, be less delay in carrying out these and other much desired improvements.

Filters for barracks.

139. The excellence of Dr. Macnamara's filters as a means of purifying the water in barracks has been almost universally admitted, and the reports regarding them have been generally very favorable. Their general adoption has accordingly been sanctioned. They, however, labor under one defect, that the water being delivered from a metal vessel is, during the hot season, warmer than palatable. To obviate this defect, and prevent the men from having recourse to less pure, but cooler, sources of supply, earthen goblets with long and narrow necks will be provided, into which the filtered water may be kept ready for use, and in which it would be little likely to receive impurities. In Bombay I may state that the silicated carbon filters have proved a failure, and that the filter carts sent for trial are so heavy that they are practically useless.

Trench system of conservancy.

140. The use of shallow trenches, instead of pits, for receiving the sewage of cantonments has been successfully continued. The reports on the working of the trench system of latrines for native troops and followers also are, as a whole, satisfactory. In some places theoretical objections have prevented its introduction, but in most cases in which it has been carefully tried it has proved successful. Under the gradual system which has been directed prejudices will no doubt in time disappear. The necessity of cultivating over the trenched area has not been sufficiently understood, but it is important for the cantonment authorities in every station to bear in mind that without cultivation the system is incomplete, both in a sanitary and economic point of view. Their attention has been drawn to this point, and also to the fact that during the rains, and especially in low-lying localities, fresh trenches must be dug daily to the extent required to meet the wants of the people using them.

Cultivation of cantonment lands.

141. The cultivation of cantonment lands, which was strongly recommended as a necessary adjunct of the trench system, and also as a measure which might be generally adopted with advantage wherever ground could be spared for the purpose, has been largely introduced. In several stations which I visited during the cold season, I found hundreds of acres under crop which, in former years, had been little better than a wilderness. Not only was the eye relieved by the expanse of green, but the cantonment funds had benefited, and the improvement, I feel satisfied, is calculated to have an excellent effect on the health of the community. In October 1871 the Government observed that the progress made has been highly satisfactory, and trusted that its gradual extension may be equally successful.

Feeding milch cattle on stable litter.

142. The disgusting practice of feeding milch cattle with stable litter and horse-dung is largely followed by contractors who supply milk to the troops. Although it may be difficult to prove that disease actually arises from such a cause, there can be no question that all animals which contribute to the food of man should be fed and kept in every way in a cleanly manner, and that the food which they provide is much more likely to prove wholesome under such circumstances

than it otherwise would. The subject was several years ago noticed by the Sanitary Commission, who then recommended that the practice should be prohibited. On a further reference the local Governments have now been requested to frame such a rule under Act XXII of 1864 as would invest the cantonment authorities with power to repress the practice within cantonment limits.

Disinfectants.

143. Disinfectants according to the following scale have been sanctioned for use in hospitals of the European and Native branches of the service :—

Scale for twelve Months.

REGIMENTS, &c.	Carbolic acid fluid.	Macdougal's disinfecting powder.
British.	lbs.	lbs.
For a Battery of Royal Artillery	30	30
„ Brigade of Royal Artillery or Cavalry Regiment ...	60	60
„ Regiment of Infantry	120	120
„ Convalescent Depôt	120	120
Native.		
For a Regiment of Infantry	40	40
„ Wing of Infantry	20	20
„ Regiment of Cavalry	30	30
„ Wing of Cavalry	15	15

Re-distribution of the Army.

144. A re-distribution of the European Army has been decided on. In arriving at the details of this measure, regard has been had not only to the extension of the railway system, and the reduction in the number of regiments which render changes desirable, but also, so far as political and military interests will allow, to the importance of placing the British soldiers so that they may be least exposed to unhealthy influences. In this Presidency the chief change to be noted is, that more men will be placed in the hills, a full regiment being quartered near Murree, and the force both at Chukrata and Raneekhet being increased.

Sanitary requirements of stations.

145. The measures adopted for ascertaining and dealing with the sanitary requirements of individual stations will be referred to more in detail in connection with the annual cantonment reports which have been received for 1871, but as these include the wants both of European and Native troops, it will be more convenient to consider them in the next section of this Report.

SECTION II.

NATIVE TROOPS.

Components of the Native Army of Bengal.

146. The Native Army of the Bengal Presidency may be conveniently considered as consisting of four distinct bodies of men. *First*, there is the regular Native Army, numbering about 44,000 men, which is distributed over a very large area extending from the confines of Assam on the east to the North-Western Frontier. *Secondly*, there are the irregular regiments occupying stations in Central India which are all more or less of a local character, and which form the small group shown in the Tables as the Central India Irregular Force numbering between 5,000 and 6,000 men. *Thirdly*, there is the Punjab Irregular Force, with a strength of over 12,000 men, which is also a local force garrisoning the stations of the North-West Frontier. And, *lastly*, there are the few Madras regiments quartered in one or two stations of the Central Provinces and Central India, which, for statistical purposes, are better grouped together, as they are composed of different elements, and are subject to somewhat different conditions.

General arrangement of the statistics.

147. The sanitary history of these several bodies of native soldiers during 1871 is very fully shown in the Tables which have been framed almost exactly on the same model as that which has been followed in the last few years. They indicate the causes to which the deaths have been chiefly due, not only in each group, but in every station of which each group is composed; the relative proportions of the mortality in each month, as well as the nature, extent, and distribution of the principal diseases by months and stations. And in the case of the regular Native Army, these and other details are given, not only for the force as a whole, but also for each of the five groups into which, for the purpose of comparing the results in different geographical areas, it has very properly been divided. Into all these matters I shall not attempt to enter. They can well be studied in Dr. Bryden's very clear and complete statistics, and I shall merely draw attention to the main facts of the year.

Total mortality during the year. Regular Native Army.

148. Among the men of the regular Native Army, there were 792 deaths during the year, of which 592 occurred with their regiments, and 200 were reported among those on leave. The total mortality in relation to 44,477, the average strength, equalled 17·81, a ratio which is under that of either 1869 or 1870, when it stood respectively at 20·41 and 19·43. It is also somewhat less than the average of the 10 years 1861 to 1869, which was 18·25. The individual groups into which the regular Native Army has been divided present in this respect very different results. In the regiments stationed in Bengal Proper and Assam the death-rate was very heavy, amounting to 25·03; in those of the Gangetic valley 13·75; in the third group 16·13; in the fourth only 11·82, and in the Punjab 18·53. The causes of these marked variations will be considered when discussing the diseases which chiefly contributed to the mortality among men with their regiments whose cases came under medical observation, and the particulars of which are recorded in the Tables; for among them the ratio in the several groups followed a proportion similar to that which is afforded by the deaths taken as a whole.

Central India Irregular Force.

In the Central India Irregular Regiments the results were more satisfactory, for in these the total death-rate equalled 14·64, the equivalent of 82 deaths among 5,600 men. But although this ratio compares favorably with that of the Native Army generally, and of the Central India Irregular Force in 1869, when it amounted to 18·09 per 1,000, it is considerably above the proportion of loss in this same group in 1870, when it was only 10·57.

Punjab Irregular Force.

In the Punjab Irregular Force, out of a strength of 12,300 men, 257 died, or a proportion of 20·90 per 1,000. In 1870 the death-rate was 18·85; but in 1869, chiefly owing to epidemic cholera at Kohat and Bunnoo, it was 26·72.

Madras regiments serving in Bengal.

The returns from the Madras regiments serving in the Bengal Presidency do not show the deaths occurring among men away from their regiments, and the total mortality in them is thus unknown, a defect which should be remedied in future years.

Death-rate among men with their regiments. Regular Native Army.

149. Deducting those who were absent on leave, the average strength of the regular Native Army was 39,379 men, and among them there occurred 592 deaths during the year, or a ratio of 15·04 per 1,000. This proportion, which is very nearly the same as that of 1870 (15·89), compares favorably with 17·29, the ratio of 1869, but is higher than that of any of the other ten years since 1861, when the regular Native Army was re-organized, excepting 1861 itself, when it amounted to 16·79. Both in 1861 and 1869 the chief cause of the high death-rate was cholera. If this be excluded, the mortality in 1870 (15·14) and in 1871 (14·20) was higher than in any one of the preceding nine years.

In different groups.

In the different groups into which the Native Army is divided for statistical comparison, the mortality has varied much. In Bengal Proper and Assam it equalled 18·33, a ratio higher than that of 1870, when it stood at 15·59, but lower than that of any other of the preceding 10 years, and lower than the average, 24·42. The second group shows a mortality of 9·34. During the ten years 1861 to 1870, the proportion of deaths in this group has varied from 6·63 in 1866 to 17·37 in 1865. The average for this period has been 10·31. In the third group, which comprises the Meerut and Rohilcund stations, the mortality was 14·78, a ratio higher than that of any one of the preceding seven years. At Agra and the stations of Central India, which are classed with it, the death-rate, 10·09, is lower than it was in either 1870 or in 1869, but slightly above the average of the ten previous years (9·37). In the Punjab the average during the same period was 14·20, a ratio which is raised by unusual mortality in 1861, 1869, and 1870. In 1871 the ratio was 15·62.

Central India Irregular Force.

In the regiments which compose the Central India Irregular Force, 55 deaths among 4,026 men give a ratio of 13·66 per 1,000, a proportion somewhat higher than that of 1870, when it amounted to only 10·85. During the five years 1866 to 1870, the ratio has fluctuated between 5·46 in 1867 and 19·45 in 1869.

Punjab Irregular Force.

In the Punjab Irregular Force during the past year the death-rate has been high, 17·83 per 1,000. In 1870 the ratio was 15·78. During the five years 1866 to 1870, it varied from a minimum of 6·99 in 1866 to a maximum of 25·36 in 1869.

Madras Regiments serving in Bengal.

The Madras Regiments serving in Bengal show the most favorable result. In them the death-rate during 1871 was only 7·01. In 1870 the ratio, 12·94, was also favorable, but in 1869, the only other year for which such statistics can be given, it was 22·37.

The diseases to which the mortality was chiefly due.

150. The comparative mortality in the different bodies of the Bengal Native Army is very clearly shown in the 3rd division of Table X. As in 1870, the deaths in all the groups have been mainly due to fevers, bowel complaints, and respiratory diseases. In the first group these three great heads contribute 11 out of the total proportion of 18 per 1,000; in the second 6 out of the 9; in the third 10 out of the 14; in the fourth 7 out of the 10, and in the fifth 12 out of the 15. In the Regular Native Army, as a whole, the proportion of mortality due to these causes is 10 out of the 15. In the Punjab Irregular Force they make up 14 deaths out of the 18 per 1,000; in the Central India force 9 out of the 13. To these forms of disease as the chief causes of mortality in the Native Army, further reference will be made in a subsequent paragraph.

Death-rate at individual stations, 1st group.

151. The manner in which the death-rate has affected the individual stations which compose each group of the Regular Native Army is detailed in Table XIII. In many of those in Bengal Proper and Assam the mortality was great. The ratio at Cachar was raised by the fact that 8 men out of 36 were killed in action on the Looshai Expedition. But making allowance for these, the death-rate at this station and its out-posts was 25 per 1,000. At four other stations, Fort William, Alipore, Gowhatty, and Tezpore, it exceeded 20. The high death-

rate at the two former is remarkable when the satisfactory results among the European Force in Calcutta and neighbouring stations are borne in mind. The Native Troops have continued to suffer much, while sickness and mortality among the British Troops have of late years materially diminished.

2nd group.

The stations of the second group are generally favorable. With the exception of Goruckpore and Allahabad the death rate in none amounts to 10 per 1,000. In the first of these it was 14, and in the second 17. From Segowlie, Benares, and Futteghur, the results are very satisfactory.

3rd group.

In the third group, Moradabad, Shajehanpore, and Bareilly, all stations of Rohilcund, show a very small mortality, but in the others the death-rate was comparatively high, reaching from 12·77 at Roorkee to 18·84 at Delhi; a result which, as may be seen in the Table, was mainly due to fevers and respiratory diseases.

4th group.

Agra and the Central India stations give a much more favorable return than that of either the first or the third group. The mortality at Jhansie, 17·11 per 1,000, was, however, high, and unduly raised the average for the whole.

5th group.

In the Punjab many of the cantonments give a small death-rate for Native Troops. Sealkote and Jhelum had a mortality of only 2·15 in the one, and 3·24 in the other. In five of the stations it exceeded 20 per 1,000, and at Meean Meer it reached nearly 30. Of the 38 deaths at this station, 27 are ascribed to Respiratory Diseases.

Mortality in individual Regiments, 1st group.

152. Table XVI, among many other important details, shows how the death-rate of each group was distributed among the individual regiments composing it. In Bengal Proper and Assam, where the average mortality was high, several corps suffered severely. Among these may be specially instanced the 13th Native Infantry at Fort William, the 8th Native Infantry at Alipore, and the 4th Native Infantry on the Eastern Frontier, in which the death-rate ranged from 35 to 51 per 1,000, the ratio in the latter, however, having in great part been due to loss in action, and much also no doubt to exceptional exposure in the field.

2nd group.

In the second group the only regiment which suffered with any great degree of severity was the 9th Regiment Native Infantry at Lucknow, but of the 24 deaths of the year 15 occurred among men on leave. In many of the other regiments the results were most satisfactory. In seven out of the twelve, the mortality was under 10 per 1,000, and in three of them under 5. The ratio of 2·19 in the 13th Bengal Cavalry at Lucknow, quartered as it was side by side with the 9th Native Infantry, which lost so heavily, is worthy of notice.

3rd group.

In the third group, although the average death-rate is not very high, the mortality in many of the regiments was in excess of what is to be expected in a Native Corps, especially stationed in a part of the country which is generally so favorable to health. The 17th Native Infantry at Delhi, with a death-rate of 25·50, gives the most unfavorable results. In the 16th Native Infantry, quartered at Shajehanpore and Moradabad, on the other hand, the death-rate was only 6·93.

4th group.

In the Agra and Central India group the deaths in no regiment exceeded 17 per 1,000, and in four out of the eight of which it is composed they were under 10. The highest mortality was in the 40th Native Infantry at Agra.

5th group.

The regiments stationed in the Punjab show very marked differences. Of the 28 corps of the Regular Native Army occupying this Province, six had a death-rate under 10 per 1,000, and among them the 10th Bengal Cavalry at Sealkote, with a ratio of only 2·23, takes the first place. In thirteen of them the ratio varied between 10 and 20. In nine it exceeded 20, and in not a few of these was extremely high. Among them may be especially instanced the ratios of 46·24 in the 35th Native Infantry at Meean Meer, of 41·42 in the 25th Native Infantry at Rawul Pindee, and of 40·85 in the 15th Native Infantry at Peshawur. In all of these, the great cause of death was lung disease.

Punjab Irregular Force.

Similarly unsatisfactory results, although not to the same extent, occurred in several regiments of the Punjab Frontier Force, which are shewn in this general Table, and which suffered severely from the same form of disease. Among these may be mentioned the 4th Infantry at Kohat, the 6th at Dera Ghazee Khan, and the 4th Sikhs at Bunnoo. The very high ratio of deaths in the Garrison Company of Artillery at Kohat was the equivalent of the loss of six men out of a small body.

Sickness of the year.

153. The cases of sickness throughout the Regular Native Army equalled 1,287 per 1,000, a ratio which compares favorably with 1,500 in 1869 and again in 1870, and which is also under that of any single year since 1861, except 1868, when it was 1,175. Tried by the standard of the proportion of men daily in hospital the year 1871, with a ratio of 41 per 1,000, shows a considerable diminution from 1869 and 1870, when it amounted to 47 and 44 per 1,000. In 1868 it was only 37. The causes to which the admissions were chiefly due, and the degree in which they affected each of the groups, are very conveniently tabulated in the second part of Table X. The monthly distribution of the sick-rate is given in the first part. It will be observed that the cases of illness requiring treatment varied from a minimum of 870 in Rohilkund and Meerut to 1,980 in Agra and Central India; while the daily sick-rate, which was only 29 in the first of these, was 57 in Bengal Proper and Assam. The sick-rate at each individual station for each month is given in Table XI, and the particulars of the admissions into Hospital in Table XII. The admission-rate as shown in the last column of the Tables presents very marked differences. Among a small body of men at Augur it was only 274 per 1,000; at Segowlie it was 355. At Cachar and out-posts it was 3,127, and between these extremes there are all degrees of variation. The details of sickness in individual regiments are given in Table XVI. To these some reference must be made in considering the chief forms of disease which have affected the Native soldiers during the year.

Remarks on the chief diseases, cholera.

154. Among these cholera deserves mention, chiefly on account of the few cases which occurred. Throughout the whole Regular Native Army there were only 51, of which 33 were fatal. In the Punjab Irregular Force three men were attacked, and the same number in the Central India Irregular Force. The distribution of the disease by months and stations is detailed in Table XIV. The chief appearance of the disease in the Eastern Frontier, and at Lucknow at the close of the year, accords with the facts which are known regarding the general population and the European Troops. The admissions from cholera equalled 1·3, and the deaths ·84, ratios which compare very favourably with the results of previous years. The admission-rate under this head in 1871 is exactly what it was in 1870: since 1861 it has varied from this minimum of 1·3 to a maximum of 9·8 in 1861.

Fevers.

155. During the 10 years 1861 to 1870 the admissions from fevers in the Regular Native Army have varied from 527 per 1,000 in 1868 to 866 in 1869. In 1871 the ratio has been 626. But this average for the whole is the result of very different proportions in each group. In Meerut and Rohilkund the ratio was only 448; in Agra and Central India it was 1,320; and similar marked differences appear in the stations of which each group is composed, as may be seen on reference to Table XV, in which the prevalence of this class of diseases in each month and its distribution by stations and provinces, are very clearly indicated. In the first group the admissions into hospital from this cause varied from 167 per 1,000 at Bhaugulpore to 1,709 at Cachar. In the second group similar extremes are shown at Segowlie and Nagode. Excepting Delhi, the third group shews no remarkable prevalence of fevers at any one station. At Morar the maximum of 2,011 was reached. The admission-rate in the Punjab, 469 per 1,000, is a remarkable contrast to 992, the ratio for 1870, and still more so to 1,199, the ratio for 1869. During the 10 years 1861 to 1870 the average prevalence of fever in this Province is represented by 916 admissions per 1,000, but in none of the years was the result so favorable as in 1871.

Respiratory Diseases.

156. As has been already remarked, a great part of the mortality in 1871 has been due to respiratory diseases. The increasing prevalence and fatality of these affections among Native soldiers is worthy of notice. During the 10 years 1861 to 1870

the admissions from this cause have averaged 35 per 1,000, the highest ratio having been 48 in 1870. In 1871 the ratio has been 54; nor has this increase been confined to any particular part of the country, as may be seen from the following figures:—

Ratio per 1,000 of admissions into hospital among native soldiers on account of Respiratory Diseases.	Bengal Proper and Assam.	Gangetic Provinces.	Rohilkund and Meerut.	Agra and Central India.	Punjab.	Regular. Native Army.
1861-70 Maximum in any one year ...	65	34	54	32	56	48
1861-70 Minimum " " ...	29	20	35	14	24	21
1861-70 Average " " ...	46	27	40	26	36	35
1871	78	42	33	43	56	54

In 1871 this class of diseases was the chief cause of mortality, 4·19 out of the total of 15·04 having been due to it. It is, however, only in the third group and in the Punjab that it assumed a very fatal character. In the last part of Table X it will be observed that, while in the other groups the proportion that died of these affections varied from 2 to 4 per cent., in the two above named it was 9 and nearly 13 per cent. The 35th Native Infantry at Meean Meer, the 25th Native Infantry at Rawul Pindee, and some of the regiments at Peshawur suffered most severely. The disease is no doubt the same as that which was mentioned in last year's report as having proved so fatal, especially in the 35th Regiment at Meean Meer, the same regiment which has again suffered from it so severely, but the returns contain little information in regard to it. The same affection prevailed among the prisoners confined in one or two of the jails in the Punjab; and some information regarding its nature may be gathered from the sanitary reports of the medical officers, which will be referred to in a subsequent section.

Sanitary Reports from Cantonments prescribed.

157. In last annual report it was mentioned that a proposal had been submitted to the Government to obtain every year from each cantonment a short account of its sanitary condition, of the defects under which it labored, and of any improvement which had been effected. In accordance with this proposal, under the orders of His Excellency the Commander-in-Chief, a short annual report is required from each Cantonment Committee or from the Commanding Officer in those small stations in which no such committee has been formed, embracing information on the following points:—

"I.—The health of the different corps forming the garrison during the year, the extent of sickness and mortality occasioned by the chief diseases, and the causes to which these diseases appear to be due. Under this head any marked difference in the health of different regiments of European or Native soldiers and their families should be noted, and, if possible, accounted for. The health of the general European and Native community inhabiting the station, as illustrated by the mortuary statistics, should also be noticed. These reports will be made in the accompanying form, and completed up to date of a regiment leaving a station, commencing again with the arrival of the relieving corps, and thus completing the year's reports, or nearly so.

"II.—The defects of the station which are prejudical to health as regards—

"1st.—Any defects of the drainage within cantonments, the existence of jheels, marshes, &c., in it or its vicinity.

"2nd.—The water-supply, either as to deficient quantity or inferior quality, any sources from which it may be contaminated either in wells or tanks, or in the mode of drawing and distribution, &c.

"3rd.—Accommodation for the troops: any insufficiency occasioning overcrowding either in barracks or hospitals, with reference to the superficial space allowed per man in the plains and hills,* any defects in the nature of the accommodation for either European or Native troops.

"4th.—Conservancy: any defects in the condition of the latrines and urinaries provided for the troops in the system of conservancy adopted in them, in the mode of disposing of sewage, or in the nature and condition of the necessaries used by the Native troops and population, &c.

---

* Barracks in the plains, 90 feet per man.
Barracks in the hills, 77 feet per man.
Hospitals in the plains, 120 feet per man.
Hospitals in the hills, 102 feet per man.

" *5th.*—If any part of cantonment land is manured with station sewage, and then cultivated, the area thus employed to be stated.

" *6th.*—Any want of cleanliness of the station generally, of Native bazaars, compounds, &c.

" *7th.*—Any inferiority in the quality of rations supplied to the European troops, or any unusual deviation from the ordinary market prices of food for the Native troops and population.

" *8th.*—Any other defects requiring notice.

" III.—A detail of measures adopted during the year to improve the sanitary condition of the station, as well as any which are under consideration.

" IV.—Suggestions for remedying defects still existing under the several heads already given."

It was particularly intended that in the preparation of these reports, every member of the Cantonment Committee should be interested and more or less engaged. The committee is purposely composed of representatives of different branches of the service, so that all matters affecting the public health may be fully and satisfactorily considered. The assistance of the Sanitary Officer is no doubt specially required, but it is a common and very mistaken notion that valuable information and suggestions on sanitary matters can emanate only from medical officers.

Cantonment Sanitary Reports for 1871.

158. These cantonment sanitary reports for 1871 have all been received. Some of them are not so complete as could be desired, but generally they afford valuable information regarding the sanitary condition of each station, and the annual consideration of this important subject, in connection with the facts relating to the health of the residents during the year, cannot fail to have an excellent result, especially as not a few of the defects may be remedied by the local authorities. Matters of more importance have received the attention of Army Head-Quarters and also of the Government where general questions of importance have been concerned.

New standard plan of Hospital for Native troops.

159. A revised standard plan of hospital for Native troops was introduced during 1871. The former plan was found to provide more accommodation than is really required, while at the same time the style of building was not altogether suited for the purpose intended. The new design consists of two wards, each 70′ × 20′, designed to accommodate 24 patients in each. Four small rooms, each 12′ × 12′, are also provided in the corners of the verandah, three of which may be used as wards. In addition two separate huts are allowed for infectious cases, each to contain three patients at the rate of 110 superficial and 1,800 cubic feet per bed.

SECTION III.

JAILS.

The health of the prisoners as a whole compares very favorably with that of previous years.

160. Taken as a whole, the returns of sickness and mortality among the prisoners in this Presidency during 1871, have been extremely favorable when compared with previous years. Out of an average strength of 57,537, the admissions into hospital equalled 927, the daily sick 29, and the deaths 34 per 1,000. In 1870, which was also a favorable year, the proportions were 982, 30 and 41, so that under each head the results of 1871 show an improvement. The death-rate is not so favorable as it was in 1868, when it equalled 30 per 1,000, but the sick-rate has never been lower, nor have the admissions into hospital ever been so low as in the past year. These statements apply to the prison population of the Bengal Presidency taken as a whole. In the different geographical groups in which the jails are classed, there have naturally been differences and fluctuations in the extent of sickness and mortality from year to year, but as will be shown in a subsequent paragraph, the improvement has been very general, and the fact that it has to a great extent been gradual and steady, gives all the more hope for the future.

Distribution of the sickness.

161. Table VIII so fully details the forms of sickness which chiefly prevailed, not only throughout the Presidency, but also in the various groups of jails which make up the total, that on this point it is almost sufficient to refer to it. The admissions into hospital, it will be observed from the second portion of this table, varied from 704 in Central India to 1,238 in the first, and 1,412 in the third group. The average daily sick of 29 is composed of ratios varying from a minimum of 22 in the Punjab to 42 in the Central Provinces. The fluctuations in the daily sick-rate from month to month are shown in the first division of this table. Taking the whole body of prisoners, the minimum, 23, was reached in June, and the maximum, 37, in October. Each group presents similar variations, and has its own period of increase and diminution. The smallest proportion of sick in any one province was 17 in the Punjab during the month of April, and the highest 51 in Bengal Proper during the month of October, and the same in the third group in November. It will be seen hereafter that Tables IX, X, and XII indicate similar fluctuations in individual jails to those which are apparent in the different groups as indicated in Nos. II to VIII.

Diseases chiefly prevailing.

162. The second division of Table VIII shows not only the total cases of sickness, but also the chief forms in which it prevailed. Fevers as usual compose the great bulk of the admissions into hospital. Of the total of 927 per 1,000, 444 or nearly one-half are due to this cause. Diarrhœa and dysentery contribute the next largest proportion, 168 per 1,000, and then follow abscess and ulcers 81, injuries 36, and respiratory diseases 34. Although the ratios vary in the different groups, these great causes of admission into hospital preserve almost exactly the same order and the same proportion throughout. On the whole they account for 763 cases of illness per 1,000 out of a total of 927; in the first group they account for 981 out of 1,238; in the second for 654 out of 785; in the third for 1,166 out of 1,412; in the fourth for 579 out of 704; in the fifth for 728 out of 826, and in the sixth for 693 out of 825. Omitting injuries, abscess and ulcers, which are in many cases the result of accident, there remains the fact that the two forms of sickness which made up by far the greater proportion of admissions into hospital are fevers and bowel complaints—a fact which is well known, but which cannot be kept too prominently in view with reference to the measures required for the prevention of these diseases. That much has already been done towards this object, especially as regards the diminution of bowel complaints, will appear from the statistics of the last few years when compared with those of an earlier period

Distribution and chief causes of mortality.

163. The death-rate which averaged 34·52 for the Presidency, as a whole, varied from a minimum of 19·73 in the Agra and Central India group, to a maximum of 55·27 in the Rohilkund and Meerut group, a very high ratio, especially for a portion of the country from which the returns have, as a rule, been comparatively favorable. In all the groups that class of diseases known under the general head of dysentery and diarrhœa has been the principal cause of mortality; to this over the Presidency 14·69 out of 34·52, or nearly one-half of all the deaths are to be ascribed; and excepting the Punjab where fevers head the list, a similar remark applies to each of the groups. In the first dysentery and diarrhœa account for 15 out of the 40 deaths per 1,000, in the second for 16 out of the 32, in the third for 10 out of the 26, in the fourth for 6 out of the 19, in the fifth for 29 out of the 55, and in the sixth for 6 out of the 27. Next to bowel complaints, as a cause of mortality among the prisoners, come fevers, but the ratio of deaths due to them is comparatively small. For the whole Presidency it amounts to 4·73, varying from a minimum of 1·13 in the Gangetic provinces to a maximum of 13·48 in Rohilkund and Meerut. Respiratory diseases caused a mortality very little short of that due to fevers or 4·41 per 1,000. Under this head the smallest ratio, 2·88, was contributed by the jails in the Central Provinces, and the largest, 5·98, by those of the Punjab. These and many other particulars are very clearly shown in the third section of Table VIII.

Sickness and mortality in individual jails, 1st group.

164. But however interesting and important these generalizations are, it is essential, in a sanitary point of view, to trace any excessive sickness or mortality to the particular jail in which it occurred, and to endeavour to ascertain the causes to which it was due. Tables X and XII detail the causes of admissions into hospital and the deaths due to each disease, and indicate the proportion in which the prisoners in each jail suffered both from sickness and mortality. With these data and with the sanitary reports by the officers in medical charge, the particulars of any excessive sickness and mortality, and the circumstances under which they occurred, may now be investigated. In the first group, omitting those in which the average strength of prisoners is small, there are a number in which either the sickness or mortality or both were excessive, and far above the average of the province. Those, the particulars regarding which are given in the following statement, may be selected for examination :—

JAIL.	Average strength.	PER 1,000 OF AVERAGE STRENGTH.			
		Admissions into Hospital.	Daily Sick.	DEATHS	
				From cholera.	From all causes.
Presidency	769	1,814	35	......	7·80
Alipore	2,247	1,615	65	5·79	55·63
Baraset	282	1,517	56	......	78·01
Jessore	435	1,696	57	......	41·38
Hooghly	510	1,749	47	15·69	78·43
Burdwan	213	2,187	56	......	61·03
Dinagepore	349	2,621	60	......	60·17
Rajshahye	558	838	28	......	62·72
Rungpore	275	1,301	40	......	65·45
Backergunge	443	864	27	6·77	67·72
Bhaugulpore	550	380	18	3·64	56·36

Presidency.—The mortality was very low, only 7·80 per 1,000, but the sickness, represented by 1,814 admissions per 1,000, was heavy. Of these 1,019 were due to fevers, and 355 to dysentery and diarrhœa. There was no overcrowding. The water was supplied from the municipal hydrants. No explanation is given of the increased sickness. The medical officer remarks, that "according to the report of the Health Officer the town of Calcutta was in an exceptionally healthy condition during the first six months of the year, after which the amount of disease gradually increased, reaching its maximum in December." In the jail there was a similar rise, for the daily sick-rate, which stood between 12 and 26 from January to June, gradually rose from 28 in July to 67 in October.

Alipore.—There was some overcrowding both in the beginning and end of the year due, the Superintendent observes, to the temporary presence of gangs of life convicts on their way to the Andamans. The ventilation is reported to be defective. It is remarkable that while the proportion of fever cases treated in the Presidency Jail during 1871 was much in excess of what it had been in 1870, in the Alipore Jail, which is not a mile distant, it was the reverse. The Superintendent remarks, "the number of cases of ague treated was much less than in the previous year." The mortality was heavy, 125 deaths occurred, or a ratio of 55·63 per 1,000. Of these 50 were due to dysentery and diarrhœa, 23 to phthisis pulmonalis, 16 to respiratory diseases, and 13 to cholera. Of the 16 deaths from respiratory diseases, 15 were caused by pneumonia, a form of lung disease, which, Dr. Lynch remarks, "is very common in this jail, and there is ground for connecting it with bad ventilation as the predisposing cause." In the female prison, which lies not far from that occupied by the male prisoners, the unusual prevalence of ague, it may be observed, accorded with the experience of the Presidency Jail. These varied results in different bodies of prisoners all confined within a small area deserve careful investigation.

Baraset.—There was considerable overcrowding, and the ventilation imperfect. Many of the prisoners are old and infirm, transfers from the Alipore and Presidency Jails. The death-rate, 78·01, was very heavy. The medical officer observes:—"The principal causes of sickness and mortality were old age, previous impaired health, malaria, influence of the seasons, exposure to dampness of the soil generally caused by early and continued heavy rains, swampy state of the adjoining lands." To these are to be added the epidemic character of the last half of the year, overcrowding, want of a varied diet to suit different degrees of health, and the late issue of the cold weather clothing. During the last six months of the year the district suffered much from fever, more severely than it had done since 1864. Among the prisoners fever accounted for 716 and bowel complaints for 418 cases per 1,000 out of the total of 1,517.

Jessore.—The jail was overcrowded. Fever was extremely prevalent. Of the total of 1,696 admissions per 1,000, 1,367 were due to this cause. Of the 18 convicts who died, 14 are reported to have been received in a bad state of health. The people generally suffered much from fever towards the close of the year, and also from cholera, but only one prisoner was attacked with this last disease, and the case did not prove fatal.

Hooghly.—No overcrowding. Of the total death-rate, 78·43, 15·69 due to cholera. The medical officer reports that "the general health of the prisoners has been good." The 40 deaths which occurred, he observes, include "the debilitated and hopeless cases admited into jail."

Burdwan.— No overcrowding. "The health of the prisoners was excellent during the first eight months of the year. The returns show a slight increase of admissions from fever in July and August. In September there was still an increase, but nothing in excess, the daily average of admissions having risen from 7·96 in July to 10·600 in September. In November the daily average of sick rose to 27·470, and in December to 43·190, during which month about one-third of the jail population were either sick or convalescent from fever. The fever prevalent was of the common intermittent type in the first instance. During the three last months of year it assumed the congestive and asthenic character, which was known to be prevalent in the city and surrounding villages. Symptoms of anœmia, general debility, and blood-poisoning speedily supervened, accompanied by local congestive complications of liver and spleen. A few cases of remittent fever were observed, three of which died during the year, the prominent symptoms being cerebral congestion

"The health of the district has been exceedingly bad during the year, endemic fever having prevailed to a very great extent in most of the thannahs and sub-divisions. In comparison with last year the prevalence of fever has been more general and more severe throughout the district, and the mortality greater."

The cases of sickness 2,187, and the deaths 61·03 per 1,000 were both heavy.

Dinagepore.—A very high admission-rate, 2,621 per 1,000, and the mortality 60·17 also great. There was no overcrowding, and the ventilation is said to be excellent. The general health of the prisoners is reported to have been better than in former years. In 1870 the admission-rate was 1,566, and the death-rate 68·96.

Rajshahye.—The sickness was small, only 838 admissions per 1,000, but the death-rate equalled 62·72. The medical officer considers the diet insufficient for the minority undergoing *penal* labor. He ascribes the high mortality in a measure to the weak and impoverished condition of many of the new prisoners, and especially of those received from the Rungpore District.

Rungpore.—Compared with other years the general health of the prisoners is reported to have been satisfactory. The admission-rate equalled 13·01, and the death-rate 65·45 per 1,000. The district is very unhealthy. "The people generally are weak and debilitated, most of them having enlarged spleen, which increases with returns of ague. The year 1871 was particularly unhealthy."

Backergunge.—No overcrowding, but the floors of the barracks reported to be damp. The medical officer observes that "the general health of the prisoners has been remarkably good throughout the year." The admissions into hospital were only 864 per 1,000, but the death-rate was high, 67·72. Of this 6·77 was due to cholera; in 1870 the ratio was 91·60.

Bhaugulpore.—Sickness was little prevalent; only 380 admissions into hospital per 1,000, the death-rate 56·36, high. Of the 31 deaths 19 were due to dysentery and diarrhœa and two to cholera. The high mortality is not remarked on by the medical officer. In 1870 the ratio was only 17·33.

Sickness and mortality in individual jails, 2nd group.

165. In many of the second group of jails the prisoners enjoyed excellent health. In 12 of them the mortality was under 20 per 1,000. Seetapore Jail, with a death-rate of only 4·44, stands highest in this respect. The admission-rate in nearly all of them presents a remarkable contrast to that which obtained in the first group. In the six following jails the results were unsatisfactory:—

JAIL.	Average strength.	PER 1,000 OF AVERAGE STRENGTH.			
		Admissions into hospital.	Daily Sick.	DEATHS	
				From cholera.	From all causes.
Chumparun	247	765	32	...	80·97
Mozufferpore	500	776	30	...	122·00
Benares (Central)	1,118	1,405	34	...	44·72
Mirzapore	260	769	26	...	46·15
Jounpore	265	905	18	7·55	41·51
Goruckpore	577	1,497	48	...	74·52

Chumparun.—"The general health of the prisoners continued very good up to the beginning of September, and then bowel complaints broke out with great severity." The disease steadily increased up to October. The sanitary arrangements are reported to have been good. "The only cause assignable is the sudden variation of temperature combined with the damp atmosphere." These diseases prevailed also to a great extent in the surrounding district. The situation of the jail is defective.

Mozufferpore.—The jail was greatly overcrowded, and to this cause, with the damp wards and the general flooding of the country, the medical officer ascribes the results. The district is reported to have been healthy.

Benares (*Central.*)—The unusual sickness is attributed to the heavy rainfall, 72 inches, in place of the average of the previous four years, 40 inches, to the receipt of a large gang of sickly prisoners from the Jounpore Jail in September, and the ration of inferior kinds of grain, the use of which was, it appears, continued for some time under a misapprehension of the orders of the Government.

Mirzapore.—There was slight overcrowding. The medical officer remarks that the general health of the prisoners has been good as compared with former years. In 1870 the mortality was 57·14.

Jounpore.—Great part of the jail was destroyed by the flood in September. Two deaths from cholera took place out of three attacks in April. Of those who died several were old men, who were received into jail in an infirm state.

Goruckpore.—Up to August the health of the prisoners was fairly good. From September to the end of the year it was bad, and the daily sick in hospital varied from 74 to 95 per 1,000. There was much sickness among the free population. The death-rate, 74·52, high as it was, was lower than the ratio for 1870, when it amounted to 99·41. Coincident with the commencement of the sickness great part of the district was under water. The water in the wells at Goruckpore rose to the level of the ground.

Sickness and mortality in individual jails, 3rd group.

166. In nearly all the jails which form the third group, the number of prisoners was small. In only two of them, Raepore and Nagpore, did it exceed an average of 200 during the year. In the first of them there was no unusual sickness or mortality.

Nagpore.—The admissions equalled only 1,237, and the deaths 22·70 per 1,000. The health of the prisoners showed a marked improvement compared with the experience of former years, and this the medical officer attributes in great measure to the better diet, and especially the increase in the allowance of salt. He observes that when he took charge in October 1870, nearly 9 per cent. of the strength were in hospital. Wellmarked scurvy and ulceration of a phagedœnic and gangrenous character were prevalent. All the prisoners were more or less debilitated, and the mortality rate was high. This condition of things he ascribed to deficiency in the allowance of fresh vegetables, fatty matter and salt, and of actual deficiency of quantity for prisoners employed in really hard labor. The allowance of fresh vegetables and ghee was accordingly doubled, and the allowance of salt raised from 180 to 300 grains per man.

Sickness and mortality in individual jails, 4th group.

167. *Ajmere.*—In the fourth group the highest mortality, 43·75, occurred in the Ajmere Jail. In the Jubbulpore Jail it was 30·55. In all the others it was under 30, and in 7 of them under 20 per 1,000.

In the *Ajmere* Jail there was slight overcrowding, but to avoid this as much as possible some of the prisoners were confined in the workshops. The medical officer observes that the general health of the prisoners has been good, but the cases of sickness equalled 1,887 per 1,000, and the death-rate, as has been already stated, was high. Fevers accounted for 784 admissions into hospital per 1,000; of these eight proved fatal. Of the remaining six two were from bowel complaints, three from respiratory diseases, and one from dropsy.

Sickness and mortality in individual jails, 5th group.

168. In the fifth group none of the jails show any very excessive sickness, the highest admission-rate having been 1,334 in the Meerut District Jail; but in many of them the mortality was very great. Among these may be instanced the ratio of 46·49 in the Bareilly Central Prison, 59·21 at Saharunpore, 98·88 in the Meerut District, and 154·70 in the Meerut Central Prison.

Bareilly Central Prison.—The health of the prisoners, it is remarked, has been "good and better than that of last year," but 49 deaths occurred irrespective of 11 due to wounds received during the suppression of an outbreak among the prisoners.

The *Saharunpore* Jail was somewhat overcrowded, especially during the latter part of the year. The sickness was less than it had been in either of the two previous years. In 1869 and 1870 the district of Saharunpore, and especially the Jumna tract in which the city lies, was ravaged by a very fatal form of malarious fever, and from that and its sequelæ very great part of the mortality among the prisoners has been due. With regard to the five deaths which occurred from respiratory diseases, Dr. Garden remarks:—"In pneumonia and other diseases of the lungs there is an increase, especially as regards pleuritis. This disease, as evidenced by the results of *post mortem* examination of adults, is remarkably common, as in fully half the bodies opened, whether of prisoners or persons sent in from the district, old pleural adhesions are found. Thus in 16 prisoners examined during 1871 it was found in 7 in addition to 3 others in whom the pleura was acutely inflamed. I may remark that pleurisy and pneumonia occurred almost as an epidemic in that part of the district where the fever had been worst in the early part of the year."

This remark is interesting in connection with the mortality due to lung diseases in certain Native regiments as already mentioned, and also in regard to the prevalence of a similar affection among the prisoners in the jails of the Punjab.

Meerut Central Prison.—Among the causes to which the very heavy mortality is ascribed by the medical officer is the want of proper drainage. The drinking water was suspected to be another cause, but analysis has shown it to be of good quality. Of the 153 deaths which occurred, 103 were due to dysentery and diarrhœa. The previous year had been most unhealthy, and 1871 commenced with 20 deaths in January among those who had been prostrated by previous sickness. This heavy loss of life is all the more remarkable because for some years the statistics of the prison had been most favorable. In 1865 the death-rate was only 19 per 1,000.

Meerut District Jail.—Here the same causes produced a heavy mortality, but not nearly so high as in the Central Prison, from which it is less than a mile distant. Dysentery and diarrhœa accounted for 31 out of the 44 deaths. In neither jail was there any overcrowding; the food was carefully attended to; and the clothing, although issued somewhat late, is considered ample. The site of the district jail moreover is high.

It is extremely difficult to account satisfactorily for the lamentable mortality. On this subject the Inspector General of Prisons in his Annual Report for 1871 remarks:—"In the two Meerut Jails the sickness has been contemporaneous with general bad health amongst the surrounding free population, so that some at least of the causes operating on the prisoners must have been general."

Sickness and mortality in individual Jails, 6th group.

169. In none of the jails of the Punjab did any very excessive sickness prevail. Omitting the Lahore Female Jail, where the average strength of prisoners was small, the highest admission-rate was 1,741 per 1,000 at Dera Ghazee Khan. But in several of them the death-rate was heavy, and in one or two, although the total mortality was not great, the presence of a fatal form of lung disease deserves notice.

Delhi.—Admissions into hospital, 1,490, and deaths, 58·54 per 1,000. There was considerable overcrowding. Of the 21 deaths 13 were due to bowel complaints. The medical officer is of opinion that since the more liberal diet which was in use two years previously has been stopped, the health of the prisoners has deteriorated as shown by the want of stamina and soft spongy gums.

Roopur.—Admissions 1,305 and deaths 88·40 per 1,000. Of the 48 deaths, 10 were due to fever, 18 to bowel complaints, 5 to respiratory diseases, and 5 to heat-apoplexy. The prisoners are employed in excavating a canal, and at the instance of the Superintendent have extra food allowed them. Fever was extremely prevalent both among the prisoners and the inhabitants of the district generally, and to this cause the Superintendent ascribes the general deterioration in the health of the convicts and the higher mortality.

Loodianah.—Admissions 896, and deaths 45·05 per 1,000. Of the ten men who died all but three were over 50 years of age.

Lahore Central Prison.—Only 567 admissions and 15·07 deaths per 1,000. With regard to the deaths from the affections of the lungs, the medical officer remarks:—"As regards disease of the respiratory system there were 74 admissions, or nearly half what the number was in 1870. This is no doubt owing to the fact that comparatively few cases of epidemic pneumonia were admitted during the year." Nine cases of heat-apoplexy were treated and all recovered. All occurred on the 20th June. "Numerous fatal cases occurred in the city and among the European population on the same day." Dr. Lethbridge in his sanitary report further writes:—

"There are some points with reference to these cases that I will just mention briefly here. Only two out of the nine who were attacked were exposed to the direct rays of the sun. One was taken ill in a solitary cell, and the remainder were employed in ordinary workshops. A large number of prisoners who were not treated complained of having been very much, as they called it, "ghub-rowd." This was followed by a decided increase in the admissions from fever. The meteorological observations show that the temperature was very high during the two previous days. Although the mean in the sun was highest on the 20th, the mean in the shade appears to have been higher on the 19th. I would also draw attention to the readings of the barometer and the dry and wet bulbs as being peculiar. In the afternoon a slight dust-storm passed over the station. There were no admissions from heat-apoplexy after this. On the 21st and 22nd there was a very marked decrease in the temperature. I attribute the success in treatment entirely to the continuous use of the cold douche, and in one or two cases, where the temperature was very high, to the promotion of evaporation by fanning. In the cases in which the depression was very marked the douche appeared to cause convulsions, but these soon stopped on its being continued: I believe that many cases are lost from being neglected at night, during which the temperature of the body has a decided tendency to rise. The use of stimulants in cases accompanied with depression I believe to be absolutely necessary.

Montgomery Jail.—Admissions 799, and deaths 33·95 per 1,000. Eleven of the deaths were due to respiratory diseases, but as the medical officer merely remarks that in the cold weather cases of bronchitis and pneumonia were prevalent, it may be inferred that they presented no unusual character.

Mooltan.—Admissions 443, and deaths 24·69 per 1,000. To prevent overcrowding in the barracks it was necessary for some of the prisoners to sleep in the worksheds. The general health was very good. Twelve convicts died of lung diseases. With reference to them the medical officer writes:—"Diseases of the respiratory system come next to fever in frequency. There were 78 cases treated, of which 68 were pneumonia. Although there was no severe epidemic of pneumonia as in 1870, the number of cases is very high, and caused the greatest number of deaths, 12. All the prisoners attacked with pneumonia were isolated and treated in a separate building. I have looked upon it as very probably a contagious disease, and took the precautions I was able with this view."

Rawul Pindee.—Admissions 1,490, and deaths 70·72 per 1,000, a very high ratio. The sickness was almost entirely confined to the first three months of the year. During January to April, and partially also in May, fever, which the medical officer believes to have been a malarious remittent, was prevalent not only among the prisoners, but throughout the whole district.

General improvement in the health of the prisoners of late years.

170. These brief extracts will suffice to illustrate some of the great causes of sickness and mortality among the prisoners in this country, and also the attention which is generally being devoted to the improvement of their condition. Much still remains to be done, but the record of a series of years in which there has as a whole been a steady and gradual diminution, both of the sickness and mortality, is sufficient evidence that much has been already accomplished. From the annexed statement which includes the last 13 years, it will appear that the ratios in the latter part of the period contrast most favorably with those of the earlier portion of it, when very high sick-rates and excessive mortality were the rule.

Statement showing the sickness and mortality among the prisoners of the Bengal Presidency during the 13 *years,* 1859 *to* 1871.

YEARS.	Average strength.	PER 1,000 OF AVERAGE STRENGTH.		
		Daily Sick.	Admitted.	Died.
1859	46,733	52	1,336	82·77
1860	46,348	57	1,491	110·81
1861	50,915	48	1,314	96·65
1862	52,871	46	1,346	66·75
1863	52,401	48	1,368	85·84
1864	52,598	41	1,227	70·19
1865	54,337	35	1,154	57·66
1866	57,322	33	1,133	61·94
1867	54,962	32	1,079	38·32
1868	55,287	29	941	30·28
1869	61,998	31	1,019	42·81
1870	59,878	30	982	41·92
1871	57,537	29	927	34·52

Comparison of the results in different Provinces.

171. The following statements moreover show that this improvement has not been confined to any particular part of the country. In all of them there has been a decided advance to a more satisfactory sanitary condition. The only exception to this rule is the Meerut group, where the sickness and death-rates during the past two years have again been very high; but high as they are, they are much under the ratios for the first six years of the period with which comparison is made:—

Statement showing the sickness and mortality among the prisoners of Lower Bengal and Assam during the 13 *years,* 1859 *to* 1871.

YEARS.	Average strength.	PER 1,000 OF AVERAGE STRENGTH.		
		Daily Sick.	Admitted.	Died.
1859	15,359	54	1,543	105·15
1860	14,335	61	1,659	136·10
1861	13,924	57	1,502	87·69
1862	14,692	57	1,634	78·61
1863	15,087	56	1,704	92·73
1864	14,441	51	1,636	67·10
1865	14,598	47	1,639	58·85
1866	16,794	43	1,616	107·24
1867	15,692	41	1,408	56·65
1868	15,160	38	1,367	52·90
1869	15,658	39	1,245	50·14
1870	14,143	37	1,178	46·52
1871	14,026	39	1,238	40·42

Statement showing the sickness and mortality among the prisoners of the Dinapore, Benares, Oudh, and Cawnpore Districts during the 13 *years,* 1859 *to* 1871.

Years.	Average strength.	Per 1,000 of average strength.		
		Daily Sick.	Admitted.	Died.
1859	8,605	57	1,313	115·51
1860	9,511	69	1,460	110·15
1861	11,398	48	1,147	76·07
1862	13,975	38	1,045	51·31
1863	14,664	42	1,174	97·73
1864	15,450	31	930	67·57
1865	16,313	30	915	67·67
1866	17,088	27	902	62·85
1867	16,910	27	869	36·72
1868	17,400	25	753	28·22
1869	20,172	23	727	41·59
1870	19,757	26	812	39·83
1871	18,636	26	785	32·20

Statement showing the sickness and mortality among the prisoners of the Nagpore and Central India Group during the 13 *years,* 1859 *to* 1871.

Years.	Average strength.	Per 1,000 of average strength.		
		Daily Sick.	Admitted.	Died.
1859	4,844	71	1,355	81·75
1860	4,981	61	1,428	65·04
1861	5,089	49	1,098	34·00
1862	5,316	49	1,410	39·69
1863	4,975	57	1,525	73·37
1864	5,448	47	1,316	51·76
1865	5,221	55	1,623	104·77
1866	4,956	55	1,690	65·58
1867	4,421	54	1,658	36·42
1868	4,440	46	1,338	27·48
1869	4,795	54	1,738	74·24
1870	2,227	42	1,397	37·27
1871	2,088	42	1,412	26·82

Statement showing the sickness and mortality among the prisoners of the Meerut and Rohilkund Districts during the 13 *years,* 1859 *to* 1871.

Years.	Average strength.	Per 1,000 of average strength.		
		Daily Sick.	Admitted.	Died.
1859	7,196	49	1,456	86·71
1860	7,695	58	1,868	170·50
1861	9,669	35	1,399	183·68
1862	8,534	47	1,514	97·02
1863	8,013	45	1,292	82·80
1864	7,644	33	969	71·73
1865	7,693	18	656	33·15
1866	7,787	15	571	19·91
1867	7,403	16	586	23·64
1868	7,231	16	489	16·87
1869	8,992	20	705	29·03
1870	6,816	24	779	56·04
1871	6,007	27	826	55·27

Statement showing the sickness and mortality among the prisoners in the Punjab during the 13 years, 1859 to 1871.

YEARS.	Average strength.	PER 1,000 OF AVERAGE STRENGTH.		
		Daily Sick.	Admitted.	Died.
1859	10,729	40	970	22·28
1860	9,826	37	1,020	21·98
1861	10,835	46	1,278	81·59
1862	10,354	39	1,170	59·69
1863	9,682	43	1,126	66·03
1864	9,630	44	1,243	85·77
1865	10,482	29	981	34·92
1866	10,697	25	893	18·32
1867	10,506	28	1,028	24·66
1868	11,056	23	790	12·39
1869	12,381	31	1,156	83·36
1870	12,785	27	1,072	35·98
1871	13,385	22	825	27·19

Diminution of mortality from bowel Complaints.

172. It has been remarked in former reports that there could be no better evidence of the improved sanitary condition of a jail than the diminution in those affections of the bowels which, in the case of natives of India, so frequently attend a seriously impaired state of health. A comparison of the results during a series of years shows that tried by this test also the statistics of the last few years are much more favorable than they were.

Statement showing the deaths from dysentery and diarrhœa among the prisoners in each group of jails and in the jails of the Bengal Presidency as a whole during the 13 years, 1859 to 1871.

PER 1,000 OF AVERAGE STRENGTH.

YEARS.	Lower Bengal and Assam.	Dinapore, Benares, Oudh and Cawnpore.	Nagpore and Central India.	Agra, Meerut and Rohilkund.	Punjab.	Bengal Presidency.
1859	50·91	62·87	31·58	40·44	8·01	39·65
1860	60·90	55·93	20·08	41·45	8·55	41·17
1861	44·17	40·62	14·35	53·57	26·76	38·47
1862	40·63	32·06	18·43	24·02	12·46	27·94
1863	47·13	50·46	34·37	18·28	15·05	36·53
1864	27·01	36·24	20·20	8·51	14·44	24·03
1865	23·88	38·45	29·12	10·66	4·77	23·21
1866	46·09	21·01	24·62	6·68	2·43	23·25
1867	21·92	17·36	17·19	8·65	5·62	15·23
1868	22·29	11·61	11·71	5·67	3·08	12·06
1869	18·20	18·14	33·79	11·12	7·43	16·21
1870	15·41	19·54	13·92	29·34	8·14	16·67
1871	15·61	16·90	10·54	29·30	6·72	14·69

SECTION IV.

GENERAL POPULATION.

Reports from the Provinces still incomplete.

173. The materials for summarizing the sanitary history of the general population in the different parts of India during the year, and of comparing it with the well-ascertained facts regarding the troops and prisoners, although much more full than they have been in former years, are still incomplete. From Bengal Proper and British Burmah no reports for 1871 have yet been received, while from both the Central and the North-Western Provinces the statistical tables of mortuary registration are either imperfect or altogether wanting. A summary of the registration has been obtained from each of them, and I propose to make use of these and of any other information that is available now, rather than defer the remarks I have to offer until all the annual reports from the several Local Governments and Administrations have been collected. In dealing with the main facts which deserve notice, I shall adopt the same system as that which has been followed in previous years, as shown in the review of the annual reports of 1870, copy of which will be found in the Appendix.

Vital statistics partially given already.

174. The statistics of mortuary registration in the different provinces, under the heads of cholera, small-pox and fevers, have been already given in the first section of this report in connection with the general history of these diseases. The number of deaths attributed to "bowel complaints," "injuries" and "all other causes" not included in any of these headings will now be considered, as well as the total mortality in each province, the measures which have been taken to ensure more accurate results, and other matters connected with the important object of securing a more correct registration of deaths among the general population of India.

Deaths from bowel complaints.

175. The deaths registered as due to "bowel complaints" are given in the annexed statement. The marked differences in the ratios under this head show that little reliance can be placed on the comparative mortality assigned to it in the different provinces, but it is desirable that the figures should be recorded for future reference. The difficulty of obtaining a correct statement of the particular form of disease to which death in each case is due has been frequently explained. In the absence of any educated agency capable of distinguishing one disease from another with any degree of certainty, this difficulty is almost insurmountable. The great point to which endeavours must, in the first instance, be directed, is to accustom the people to register every death. It may be very long before any great accuracy can be attained in regard to the cause, but the statistics even now, with all their imperfections, show that, under the diseases which chiefly contribute to the death-rate, cholera, small-pox and fevers, the main facts they contain agree in a remarkable manner with the well-ascertained data regarding the concurrent history of these diseases among the troops and prisoners over the same area.

Statement showing the deaths registered from bowel complaints in the different provinces during the year 1871.

Provinces.	Population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths.	Ratio of deaths per 1,000.	Ratio for 1870.
Bengal	Not stated	1,576	1,436	1,344	1,379	1,371	1,250	1,382	1,403	1,580	1,538	1,615	1,851	17,728	...	*9857
North-Western Provinces	29,588,653	4,761	3,439	4,157	4,943	4,673	4,261	4,830	5,362	5,481	5,497	5,018	5,412	57,864	1·95	Included with "all other causes."
Punjab	17,481,189	1,570	1,082	1,181	1,555	1,623	1,762	2,055	2,221	2,402	2,414	1,959	1,851	21,678	1·24	1·56
Oudh	11,198,095	904	778	809	1,005	784	638	778	850	823	654	769	772	9,654	0·86	0·93
Central Provinces	7,266,373	999	827	1,012	1,136	885	941	1,053	1,220	1,189	1,063	995	941	12,264	1·66	2·0
Berar	2,184,945	869	668	745	843	769	660	740	965	991	693	642	699	9,284	4·25	6·4
British Burmah	2,101,058	302	270	268	257	369	628	747	587	398	335	322	350	4,833	2·30	2·85
Madras Presidency	24,555,046	3,784	2,879	2,695	2,621	2,786	3,093	3,558	3,518	3,367	3,436	3,580	3,611	38,928	1·58	
Bombay Presidency	14,266,062	2,538	2,192	2,617	2,238	2,458	2,669	2,944	2,945	2,667	2,590	2,405	2,363	30,626	2·15	

* The number registered from July to December 1870.

176. In the following statement the deaths from injuries in the different provinces are summarized:—

Deaths from injuries.

Statement showing the deaths registered from injuries in the different provinces during the year 1871.

PROVINCE.	Population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths.	Ratio of deaths per 1,000.	Ratio for 1870.
Bengal	Not stated	437	444	594	666	1.145	1,768	1,814	2.051	1,971	1.461	593	525	13,469	...	*7083
North-Western Provinces ..	29,588.653	581	557	729	867	1,012	1.475	1,615	1,645	1.613	1.141	745	551	12,531	·42	Included with "all other causes."
Punjab	17,481,189	195	153	233	287	317	604	685	670	457	303	219	227	4,350	·25	·26
Oudh	11,198,095	536	557	605	508	643	861	856	819	1,121	466	287	219	7,478	·67	·70
Central Provinces	7,266,373	157	146	165	195	268	253	349	326	362	286	240	189	2.936	·4	·04
Berar	2,184,945	†	...	...	...	...	...	...	...	...	...	...	...	821	·37	·46
British Burmah	2.101,058	†	...	...	...	...	...	...	...	...	...	...	...	425	·20	·38
Madras Presidency ...	24,555.046	1.246	1,137	1,207	1,324	1,319	1.224	1.275	1.321	1,344	1,341	1.384	1,201	15.323	·62	...
Bombay Presidency ...	14,266,062	343	313	402	524	658	750	745	692	562	584	380	370	6.323	·44	·34

* The number registered from July to December 1870.
† Not given by months.

Deaths from different forms of injuries.

177. The returns divide injuries into several heads; the number of deaths due to each of these is shown as follows:—

Statement showing details of deaths from injuries registered in the different provinces during the year 1871.

Province.	Population under registration.	Detail of deaths from injuries.				Total.
		Suicide.	Wounding.	Accident.	Snake-bite or killed by wild beasts.	
Bengal	Not stated	1,392	748	4,913	6,425	13,478*
North-Western Provinces	29,588,653	1,093	1,209	6,764	3,465	12,531
Punjab	17,481,189	208	209	2,984	949	4,350
Oudh	11,198,095	1,085	733	4,476	1,184	7,478
Central Provinces	7,266,373	480	149	1,217	1,090	2,936
Berar	2,184,945	145	48	275	353	821
British Burmah	2,101,058	52	98	161	114	425
Madras Presidency	24,555,046	2,370	1,093	8,473	3,387	15,323
Bombay Presidency	14,626,062	†	......	......	......	6,323

* There is a slight difference between the sum of the details and the total injuries given in the preceding statement.

† Details not given.

Deaths from all other causes.

178. The deaths due to causes other than those already specified were as follows:—

Statement showing the deaths registered from all other causes in the different provinces during the year 1871.

Province.	Population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths.	Ratio of deaths per 1,000.
Bengal	Not stated	2,440	1,969	1,987	2,043	2,207	2,222	2,420	2,501	2,411	2,290	2,083	2,750	27,323	
North-Western Provinces	29,588,653	3,894	3,123	3,181	3,473	3,077	3,022	3,521	4,299	4,607	4,665	3,782	3,858	44,502	1·50
Punjab	17,481,189	9,129	7,571	8,185	8,032	7,905	7,197	7,260	7,809	8,144	8,481	8,360	9,826	97,899	5·60
Oudh	11,198,095	758	620	622	611	541	469	587	805	1,039	951	769	718	8,490	·76
Central Provinces	7,266,373	1,163	1,077	1,185	1,309	1,198	1,115	1,385	1,702	1,628	1,572	1,694	1,600	16,628	2·28
Berar	2,184,945	*	...	...	...	...	...	...	...	...	...	...	...	9,313	4·26
British Burmah...	2,101,058	*	...	...	...	...	...	...	...	...	...	...	...	5,758	2·74
Madras Presidency	24,555,046	13,646	11,038	11,139	10,813	11,618	12,202	13,821	14,392	14,468	15,043	15,755	15,237	159,172	6·48
Bombay Presidency	14,266,062	4,297	4,161	4,489	5,072	4,973	5,260	5,715	5,766	5,886	5,767	4,950	4,962	61,298	4·29

* Not detailed by months.

Deaths from all causes.

179. The total mortality in the different provinces registered from all causes is contained in the annexed statement, and the ratio for 1871 at the same time compared with that for 1870:—

Statement showing the deaths registered from all causes in the different provinces during the year 1871.

Province.	Population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths.	Ratio of deaths per 1,000.	Ratio for 1870.
Bengal	Not stated	19,606	15,859	15,407	17,787	17,719	17,502	19,059	20,202	21,931	26,132	31,197	39,561	261,962	...	*122,521
North-Western Provinces ...	29,588,653	37,974	26,976	34,017	45,876	45,402	39,456	38,070	45,398	57,153	75,070	67,447	65,811	578,650	19·55	16·23
Punjab	17,481,189	34,479	27,831	28,815	30,768	31,647	28,285	25,881	27,848	32,297	30,703	30,261	34,563	363,378	21·0	24·
Oudh	11,198,095	13,410	10,275	12,827	14,103	13,847	12,458	12,024	13,505	14,418	21,634	27,312	23,112	188,925	16·87	17·12
Central Provinces	7,266,373	9,000	7,472	8,473	9,683	8,486	7,967	8,463	10,509	11,176	12,554	12,217	11,964	117,964	16·23	16·3
Berar	2,184,945	3,477	2,858	3,088	3,591	2,968	2,461	2,879	3,788	4,063	3,405	3,036	3,111	38,725	17·72	24·65
British Burmah	2,101,058	†	...	...	...	...	...	...	...	...	...	...	...	29,970	14·26	26·8
Madras Presidency	24,555,046	45,317	35,560	34,152	32,678	32,042	32,998	37,188	37,302	36,905	37,488	42,311	40,430	444,371	18·09	18·69
Bombay Presidency	14,266,062	21,501	19,926	22,876	23,190	22,587	23,282	24,223	25,224	24,115	25,077	24,823	25,349	282,173	19·78	16·2

* The number registered from July to December 1870.
† Not detailed by months.

Mortality from different causes compared.

180. The statistics of deaths under the great causes of mortality in the different provinces may thus be conveniently compared:—

Statement shewing the comparative mortality from different causes registered in each province during the year 1871.

Province.	Population under registration.	NUMBER OF DEATHS REGISTERED FROM											RATIO OF DEATHS PER 1,000.						
		Cholera.	Small-pox.	Fevers.	Bowel complaints.	INJURIES.					All other causes.	All causes.	Cholera.	Small-pox.	Fevers.	Bowel complaints.	Injuries.	All other causes.	All causes.
						Suicide.	Wounding.	Accident.	Snake-bite or killed by wild beasts.	Total injuries.									
Bengal	Not stated	20,275	3,836	179,810	17,838	1,392	748	4,913	6,425*	13,478	27,366	262,603							
North-Western Provinces	29,588,653	3,473	38,449	421,531	57,864	1,093	1,209	6,764	3,465	12,531	44,502	578,650	·11	1·29	14·25	1·95	·42	1·50	19·55
Punjab	17,481,189	369	25,534	213,548	21,678	208	209	2,984	949	4,350	97,899	363,378	·02	1·46	12·21	1·24	·25	5·00	21·0
Oudh	11,198,095	16,032	12,434	134,837	9,654	1,085	733	4,476	1,184	7,478	8,490	188,925	1·43	1·11	12·04	·86	·67	·76	16·87
Central Provinces	7,266,373	19	1,435	84,682	12,264	480	149	1,217	1,090	2,936	16,628	117,964	·002	·19	11·65	1·66	·44	2·28	16·23
Berar	2,184,945	581	601	18,125	9,284	145	48	275	353	821	9,313	38,725	·26	·27	8·3	4·25	·37	4·26	17·72
British Burmah	2,101,058	162	1,325	17,467	4,833	52	98	161	114	425	5,758	29,970	·07	·63	8·31	2·30	·20	2·74	14·26
Madras Presidency	24,555,046	17,656	20,523	192,469	38,928	2,370	1,093	8,473	3,357	15,323	159,172	444,371	·71	·84	7·83	1·58	·62	6·48	18·09
*Bombay Presidency	14,266,062	5,855	9,421	168,650	30,626	*	...	...	...	6,323	61,298	282,173	·41	·66	11·82	2·15	·44	4·29	19·78

* Details not given.

No analysis of the statistics will be attempted till the results of the late census are known.

181. It is sufficient for the present to place these figures on record. I shall not attempt any further analysis of them as regards the relative mortality ascribed to the different causes in the various parts of India, or enter into any details with a view to compare the death-rate according to age and sex, or to show how it affected the several classes of the people. These are all matters of much interest, to which attention may soon, I trust, be directed with advantage, but the system of registration is still in its infancy, and it is advisable to await the results of the late census, as there is every reason to believe that the population differs considerably from that which has hitherto been assumed to be at least approximately correct.

Statistics of Bengal specially incorrect.

182. As regards the general results of mortuary registration and the means adopted for obtaining more satisfactory data, I have little to add to the remarks contained in my review of the reports of the Sanitary Commissioners for 1870, copy of which forms one of the appendices of this report. There is still much to be done to render the registration accurate, but already, imperfect as it is, it affords very valuable information regarding the comparative prevalence of epidemics in different parts of the country. It is very remarkable that in Bengal Proper, the portion of this Presidency which has been longest under our rule, the results are very much more unsatisfactory than in any other part of the empire. As already mentioned, the sanitary report for Bengal for 1871 has not yet appeared, but statements have been received showing the mortuary statistics for the year. As the population is not yet known, the ratios cannot be calculated; but, taken even on the numbers given in the returns which fall short, I understand, by many millions of those of the late census, the death-rate represented, only 6·73 per 1,000, must be but a small part of the truth. The difficulties to be met with in Bengal are no doubt to some extent exceptionable, but with the hearty co-operation of the district authorities, and proper supervision of the agency appointed to keep the registers, much more accurate data might be obtained. It is quite impossible for the Sanitary Commissioner, especially of so large a province, to do more than examine the statements which are forwarded to his office, to point out discrepancies, and to maintain that general check which a comparison of all the returns enables him to exercise. He must depend in very great measure on the local knowledge of the authorities in each district, and they alone can be properly charged with the accurate preparation of the primary returns.

Alteration of the primary form for registering deaths.

183. The primary register for recording deaths has lately been modified so as to supply an omission as regards the sex at different ages. This was necessary in order to fit the register for the preparation of the annual statistical returns, but I find that the primary form has not been universally adopted. In several of the provinces a special form of register has been framed, and as this contains the name of the deceased and other particulars which admit of the record being afterwards verified, the change is an improvement on the standard. Some of these registers, however, are needlessly complicated, and must entail a vast amount of labor in the compilation of the general returns, which might easily be avoided without in any degree affecting the value of the record.

Food supply of the people.

184. Passing by the history of the chief diseases during the year and its meteorology, both of which have been already discussed in the first section, the food supply of the people is the next important subject referred to in the reports of the Sanitary Commissioners. In this respect the year 1871, as far as this Presidency is concerned, was generally very favorable. In the North-Western Provinces it appears that it was a year of plenty. The prices of nearly every article, except oil, which is largely consumed by the people, were under what they had been in 1870, and presented a remarkable contrast to the famine rates of 1869. In Oudh food was abundant and cheap. In the Central Provinces a similar condition prevailed; the seasons were favorable for the crops, and the harvest was abundant. The jungle produce on which the poor so largely subsist was also more than ordinarily plentiful. From Berar the accounts are not so satisfactory. The rainfall in this part of the country was deficient, and the out-turn of the harvest below the average. No actual want

was, however, experienced by the people. In the Punjab the crops were nearly everywhere excellent. Food was cheap, and the demand for labor abundant. In some few districts in which the out-turn of the harvest was not sufficient for the requirements of the people, importations prevented any very high rise in prices.

Personal Proceedings of the Sanitary Commissioners.

185. In the North-Western Provinces the Sanitary Commissioner made two principal tours of inspection; one among the towns of the Jhansie Division, and the other through the Saharunpore district, a continuation of the enquiry into the effect of canal irrigation on the health of the inhabitants which he made in the year previous. The Officiating Sanitary Commissioner of Oudh appends copy of his reports on several of the chief stations of the province. His duties as Inspector General of Prisons have in a great measure prevented his visiting the towns or villages. In the Central Provinces, Dr. Townsend devoted a considerable portion of the cold weather to arrangements connected with the special enquiry into cholera which has been sanctioned in the Jubbulpore district, and went over the selected area in company with Dr. Edis, to whom the enquiry had been immediately committed. In Berar the Sanitary Commissioner was for several months on tour, and has recorded the results in a very careful and concise form. The Officiating Sanitary Commissioner of the Punjab commenced his inspections at Delhi by an enquiry into the remarkable outbreak of cholera in the suburbs of that city in the end of November, to which reference has already been made. He subsequently visited a considerable portion of the province, and devoted special attention to certain towns in which a very high death-rate had been prevailing.

Sanitary progress.

186. Although few great works are yet being executed in the North-Western Provinces, the account of sanitary progress which Dr. Planck gives is very encouraging. "During the past year," he writes, "sanitary improvement has made considerable progress in the cities and towns of the province. Indeed, there is not a town of importance in the province in which improvement, as regards cleanliness, the better making and keeping of the public ways, the straightening and widening of streets, does not seriously engage the attention of the municipal, and other authorities. In the large cities, as Allahabad, Benares, and Cawnpore, these improvements are assuming an importance which will result in quite changing for the better the appearance of these cities. * * * * Wherever means are available, there sanitary improvement engages a quite extraordinary share of attention." In the Oudh report mention is made of improvement in drainage and other sanitary requisites at many places, but they are almost exclusively civil stations. As yet little has been done for the towns and villages. In the Central Provinces improvements have been effected in many places, and others are in active progress to completion. Among these may be mentioned the new water-works for the city of Nagpore, which are nearly ready. Had not a ship freighted with portion of the iron piping required been unfortunately lost, they would ere now have been in operation. In Berar the advantages of sanitary improvement are gradually forcing themselves on the people, and schemes for remedying existing evils, and especially for providing a better water-supply, are being devised. With regard to sanitary progress in the Punjab, Dr. Fairweather observes:—"Although no great progress can be shown in the larger works of sanitary improvement, a great deal is being quietly done in nearly every district towards improving the general sanitary condition of towns. Streets are being paved, drained, and widened. Latrines have been provided for the people in most towns, and conservancy is much better attended to than before. Noxious trades are being gradually removed to a distance, and burial, unless in a few exceptional cases, is no longer permitted within the walls of towns. Some pains are also taken to preserve the water-supply free from pollution, and registration of births and deaths is yearly improving."

The want of the Reports for Bengal and the Punjab.

187. In reviewing the reports of the Sanitary Commissioners with the Local Governments and Administrations, I have not attempted to do more than give a very brief summary of their work. To the reports themselves I must refer for much interesting and valuable information. The absence of the reports which are still due, and especially of those for Bengal Proper, is much to be regretted. The

want of this report is all the more felt, because the questions which present themselves for solution in that province are of more than ordinary interest and importance, and considerable attention has also been devoted to practical measures of improvement. The epidemic fever of certain districts has especially engaged the attention of the Sanitary Commissioner, and the results of his enquiry will be looked for with interest. But information on this subject, and details regarding steps taken for making sanitary progress, such as measures for better drainage, for the management of the Pooree gatherings, and other matters which have been made the subject of recent legislative enactment, must await the issue of his report.

Reports of Local Sanitary Commissioners to be submitted by the 1st June.

188. The date formerly fixed for the submission of these annual reports was the 1st March, but it was found impracticable to have the annual mortuary statistics ready so early in the year, especially as the duties of the Sanitary Commissioners require that they should be on tour during the cold season, and in their absence such work cannot well be done. The date has accordingly been altered to the 1st June, and it is hoped that under this new arrangement a punctuality will be observed, which has never yet been attained.

Defects in the Reports.

189. Before leaving the reports of the Sanitary Commissioners with the Local Governments and Administrations, I would observe that they are not in all cases framed in accordance with the orders prescribed. In one the statements of mortuary registration are incomplete and not according to the standard. In another there is no map to illustrate the distribution and comparative prevalence of cholera. In a third again the prescribed divisions have not been observed. These may seem to be matters of small consequence, but want of attention to them detracts considerably from the value of a report, and prevents the convenient comparison of the results in different provinces, which is so very desirable.

Education of the people in sanitary affairs.

190. The proper preparation and early submission of these reports is a matter of much importance, but the great point to which the energies of all authorities should be devoted is sanitary improvement. I have already remarked that in this respect, especially bearing in mind all the difficulties that have to be encountered, considerable progress has been made, that the attention of the authorities has been much given to this important work, but that very rapid advance can hardly be expected; for to be based on a solid foundation, it must proceed hand-in-hand with the education and enlightenment of the people in the importance of sanitary affairs. The publication of the mortuary statistics as they improve will do much to illustrate the value of human life and the amount of preventible sickness and mortality, but much might also, I believe, be done if the Sanitary Commissioners associated themselves more with Municipal Committees, aiding them with their advice, and impressing on them the real value of the works which they recommend. For this purpose nothing could be better than a short *resumé* of the results of sanitary improvements where they have already been effected. A bare statement of the facts regarding the benefits which the inhabitants of Calcutta have derived from better drainage and a good water-supply would do more to advance sanitary progress than any theoretical disquisitions as to the causation of disease.

Local Public Works Loan Act No. XXIV of 1871.

191. The Bill to enable Municipal Committees or other corporate bodies to borrow money from the Government for the purposes of sanitary and other improvements, which had for some time been under consideration, became law on the 5th September 1871, and is known as Act No. XXIV of that year, the Local Public Works Loan Act. Rules framed under the 4th section of this Act, describing the procedure to be adopted, the nature of the works for the construction of which loans will be granted, and other matters required for the application of the Act in any case, have also been published under notification of the Government in the Financial Department, No. 2987, dated the 25th April 1872. Under the provisions of this Act, municipal bodies will enjoy greatly increased facilities for obtaining the means required for the execution of works of improvement, and it is hoped that a great impetus may thus be given to sanitary progress.

Rules for regulating the conveyance by rail of persons suffering from infectious diseases.

192. The question of controlling the conveyance by rail of persons suffering from diseases which are believed to be contagious such as cholera, measles, scarlet fever, small-pox, diphtheria and hooping-cough, has been under consideration, and it was at one time proposed to resort to legislation in the matter and to attach penalties to any breach of the rules prescribed. Legislative interference has, however, been thought to be unnecessary, and the rules have accordingly been issued, simply with the request that they may be adopted by the several Railway Companies who have already shown their willingness to take all reasonable measures of precaution in such cases.

Rules for the conveyance by railway of persons suffering from contagious diseases.

1. For the purposes of these rules, the following shall be deemed to be contagious diseases:-

Small-pox,	Scarlet Fever.
Cholera,	Diptheria, and
Measles,	Hooping-cough

and the term "Station Master" shall mean the person for the time being in charge of a railway station.

II.—No person suffering from a contagious disease shall enter a railway carriage without previously notifying to the Station Master that he is so suffering.

III.—Any one having in charge a person suffering from a contagious disease shall be subjected to the same restrictions while travelling by railway, as if he himself were suffering from the disease.

IV.—If any railway carriage has been entered by a person suffering from a contagious disease, such carriage shall be disinfected within twelve hours after it has arrived at its destination in the manner prescribed in these rules, and no passenger shall be allowed to travel in it until this disinfection has been carried out.

V. The Railway Company, if called upon not less than six hours before the departure of the train, shall provide, at the usual rate of fare charged for an entire carriage or compartment, a separate carriage or a separate compartment in a 2nd or 3rd class carriage, for the conveyance of any person suffering from a contagious disease, such compartment to have no communication with the other compartments of the same carriage.

VI.—If, on the arrival of a train at any station, it shall become known to the Station Master thereof that any person travelling by that train is suffering from any contagious disease, such Station Master shall at once proceed to remove *other* travellers from the carriage or compartment.

VII.—The rules regarding persons suffering from contagious diseases shall also apply to the conveyance of the dead body of any person who may have died of a contagious disease.

VIII.—Any compartment which has been used for the conveyance of a person suffering from a contagious disease, or of the body of a person who has died of such disease, shall be disinfected in the following manner:—Every portion of the interior of the carriage shall be washed over with boiling-water, containing in each gallon a wine-glassful of carbolic acid, after which sulphur shall be burnt in each compartment, and the doors and windows kept closed on the sulphur fumes for two hours.

Contagious Diseases Act in Calcutta, Madras, and Bombay.

193. The working of the Indian Contagious Diseases Act, No XIV of 1868, in the three Presidency towns, was made the subject of special enquiry and report. In Bombay, owing to financial difficulties, the Municipality in May 1871 declined to make any further payment on this account, and as the Government was not prepared to bear the whole expense, the work of the Act in that city has come to an end. In Calcutta and Madras operations continue: the Act works now with little friction, and there is evidence to prove that considerable benefits have resulted, and that both among the women, the troops, and the people generally, venereal disease has diminished. It appears doubtful, however, whether these benefits are commensurate with the very large expenditure which is being incurred, and whether the money might not be devoted to objects of still greater utility.

The epidemic of "Dengue."

194. The sanitary history of 1871 would be very incomplete without some notice of the remarkable epidemic of a peculiar form of fever known under the name of "dengue," a fever distinguished by a measles-like eruption and attended by very severe pains, which commenced in Calcutta in the end of the year, and continued very prevalent in that city during the first half of 1872. During the same period it has spread widely over the country, and has attacked the inhabitants of many places in all the three Presidencies to such an extent, that business has for a time been seriously interrupted. In several large adult communities, regarding which particulars have been ascertained, the proportion of those who suffered varied from 60 to 70 per cent. From an interesting series of lectures by Dr. Charles, the Professor of Midwifery in the Calcutta Medical College, it appears that although isolated cases of the disease have been observed in Calcutta of late years, no such epidemic has been known in this country since 1824, when a fever in all respects the same prevailed with similar prevalence. The history of this remarkable epidemic will properly be considered in the sanitary report for the current year, when all the data regarding its appearance at different places can be collected and studied as a whole. Here it may, however, be remarked that in June 1871, dengue prevailed extensively at Aden, and that in November it was very prevalent at Port Said. It is believed to have reached Aden from Zanzibar, where it had previously been epidemic. Regarding the circumstances connected with its appearance in India, Dr. Charles, while regarding dengue as, without any doubt, a contagious malady, remarks:—

> "The dates which I have just mentioned as those at which we know that dengue prevailed in 1871 in Arabia, furnish us with tempting data for believing that the disease was imported thence to India by vessels trading directly between the two places. Indeed, we have evidence that the disease reached Bombay in two troop-ships which had passed through Egypt and touched at Aden. I have not heard whether any cases of dengue had occurred in Bombay before the arrival of these vessels in, I think, December and January; but as we had a case of it in Calcutta in September, these importations of the disease did not constitute the original source of the epidemic in India, though it was spread to various inland stations with the troops, and appeared in places previously exempt. I do not attach very much importance to our being able to trace where the first case of dengue in Calcutta came from, as other conditions besides the existence of a previous case of the disease are necessary before the disease can extend as an epidemic. In our ignorance of what these conditions are, we term such conditions *epidemic influence*. To my mind the important point seems to be that such a widespread atmospheric or other cosmic state existed during the present time as to favor the diffusion of dengue from person to person over Egypt, Arabia, and India. The disease is endemic in Calcutta, a year never passes without my seeing cases of it. Had there been no direct communication between Arabia and India, a single sporadic case occurring in Calcutta would have sufficed to send the disease broadcast over India during the last year or two; so that the past history of the malady leads us to expect that such epidemic diffusion will be possible. As soon as these unknown conditions necessary to allow the existence of an epidemic are over, a long series of years will follow during which sporadic cases of dengue will occur in Egypt, Arabia, and India, as well as in the other places in which it is endemic, and yet the disease will not spread. Under such circumstances, we shall have small communities suffering from local outbreaks, single towns, or it may be even parts of towns, more or less disturbed by this most unwelcome visitor; but the pandemic wave which is at present favouring the universal diffusion of the disease over thousands of miles being wanting, dengue will under the altered conditions spring up, and die down within comparatively narrow limits."

Tour in the Madras and Bombay Presidencies.

195. In the cold season of 1871-72, in addition to visiting some parts of the Punjab, I made an extended tour over great portion of both the Madras and Bombay Presidencies, and had thus the opportunity of becoming acquainted with the most important stations which they contain.

J. M. CUNINGHAM, M. D.,
Sanitary Commr. with the Govt. of India.

APPENDIX A.

GENERAL REVIEW

OF THE

ANNUAL REPORTS OF THE LOCAL SANITARY COMMISSIONERS

FOR

1870,

BY

J. M. CUNINGHAM, M.D.,

SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

APPENDIX A.

GENERAL REVIEW OF THE ANNUAL REPORTS OF THE LOCAL SANITARY COMMISSIONERS FOR 1870.

No. 308, dated Simla, the 25th May 1872.

From—The Sanitary Commissioner with the Government of India,

To—The Secretary to the Government of India, DEPARTMENT OF AGRICULTURE, REVENUE AND COMMERCE.

General Review of the Reports of the Local Sanitary Commissioners for 1870.

IN accordance with the instructions conveyed in your No. 149, dated the 4th October 1871, I have the honor to submit a general Review of the Reports of the Sanitary Commissioners with the various Local Governments and Administrations for the year 1870.

These Reports have been late in their appearance, and two of them have not yet been received.

2. These Reports have again, I regret to say, been very late in their appearance, and two of them, those for Bengal Proper and Berar, have not yet been received. But in the case of these two last the delay has not, I believe, been due to the Sanitary Commissioners. The Report for Bengal was submitted to the Local Government some months ago, but a doubt arose as to whether much of the matter which it contained should be printed, as it appeared to have been already embodied in the Reports of other departments. The settlement of this question, and the passing of the curtailed Report through the press, have been attended with considerable delay. The Report for Berar, I am informed by the Sanitary Commissioner, was submitted to the Resident at Hyderabad early in 1871, but it would appear to have been lost sight of, for no copy has yet reached this Office, nor, so far as I am aware, has it been submitted to the Government of India. Those Reports which have been received reached me on the following dates:—

From North-Western Provinces on the 23rd August 1871.
,, Oudh ,, 22nd September 1871.
,, Punjab ,, 2nd October 1871.
,, Central Provinces ,, 23rd January 1872.
,, British Burmah ,, 19th February 1872.
,, Bengal* } as already stated, not yet received.
,, Berar }

3. In adverting to the several points which require notice, I shall adhere to the division which was followed in last year's Review, and subsequently prescribed for general adoption in the orders of the Government, dated the 6th July 1871—

I.—The vital statistics.
II.—History of the chief diseases.
III.—The meteorology of the year.
IV.—The food supply of the people.
V.—The personal proceedings of the Sanitary Commissioners.
VI.—Sanitary progress.

In consequence of the healthy character of the year and other reasons, remarks will be brief.

But in commenting on the various matters which properly come under these respective heads, there are several reasons why my remarks must be necessarily brief. The year was singularly healthy; there was a remarkable freedom from cholera, small-pox, and other epidemics which prove so destructive to life in this country, and which prevailed with such violence over so large an area in 1869. Moreover, in my Annual Report for 1870, I have already noted the main facts regarding the comparative prevalence of disease as indicated by the mortuary statistics, copies of which had, at my request, been supplied to me by the Sanitary Commissioners, in anticipation of the appearance of their Annual Reports. For these reasons it is unnecessary to review at length the sanitary history of 1870 under some of these heads. In regard to others, the want of information precludes discussion, for the Reports do not supply the requisite data. Most of them appear to have been written before the orders of the 6th July, already referred to, had been received, and the general division which was there prescribed has not been followed. Indeed, in the case of only one of the Reports, that of the Central Provinces, have these directions been fully complied with. The Reports for 1871 will, I trust, all conform to the desired arrangements. Their punctual submission by the 1st March is, I fear, hardly possible, and with the exception of that for Berar no Report for 1871 has yet reached this Office. On this point, however, it is not desirable that I should now offer any remarks, as the question of the date by which the Annual Sanitary Reports should be submitted has been discussed in a separate communication.

---

* Copy of the Bengal Report has since come to hand.

Section I.—Vital statistics.

4. In one of the Reports for 1870, excepting that of the Central Provinces, have the mortuary statistics been given according to the prescribed method. In statements Nos. I-X, Dr. Townsend has tabulated the results of registration, and, although the figures cannot be accepted as accurate, the information, so far as it is available, has been clearly arranged. In Bengal Proper, during the last half of the year, Monthly Returns in the prescribed form have been regularly prepared, but being for only a portion of the year, they do not afford the data necessary for the preparation of the annual tables. The Returns for the Punjab, although not according to the standard, are very full, and afford much valuable information. The Report for the North-Western Provinces contains only five general tables showing the vital statistics of the Province, and many important particulars have been omitted. A similar remark applies to the annual statement for Oudh. In British Burmah the registration was still confined to only 17 towns, and the information regarding these even is very meagre and unsatisfactory.

General mortality of the year compared with that of 1869.

The number of deaths registered in the various provinces show the following ratios of mortality in 1870, and also in 1869, and with these may be compared the death rates as given in the Sanitary Reports of the Madras and Bombay Presidencies—

	Mortality per 1,000 of the population.	
	1869.	1870.
For the North-Western Provinces	17·9	16·23
„ Punjab	26·	24·
„ Oudh	16·8	17·12
„ Central Provinces ...	35·9	16·3
„ Berar	22·8	not known.
„ British Burmah ...	29·	26·8
„ Madras	18·3	18·69
„ Bombay	20·4	16·2

Statistics defective, but not to be judged by the standard of one year.

5. These results suffice to show that registration in all parts of the country is still more or less defective. The average duration of human life in India, deduced from these statistics, would certainly be greatly over-estimated. At the same time it is to be observed that the annual death rates in India, owing to epidemics and marked differences in the comparative healthiness of different years, must fluctuate to a much greater extent than they do in temperate climates. It is, therefore, all the more necessary in attempting to fix any ratio of mortality as a standard of comparison, and as a basis for calculating the probable value of human life, that the results of a series of years should be taken. But mortuary registration in India is still in its infancy, and no statistics are yet available for framing such a standard for the general population.

Many details have been already given in the Annual Report for 1870.

6. In my Annual Report for 1870 I have already shown in a series of tabular statements the total number of deaths registered in the different provinces.[*] I have compared these results with those of the year previous,[†] and have also given the proportion of the registered mortality which has been ascribed to the chief diseases.[‡] It is not necessary that I should here repeat these details, which can easily be ascertained on reference to the places indicated, nor shall I attempt to analyze the mortuary returns, either as regards the marked discrepancies which appear between different places, the comparative death rate among males and females, or among the rural as contrasted with the town population. On many of these points the necessary data are wanting from most of the provinces, and differences of arrangement in others interfere with any proper comparison. Leaving such matters to be considered when the system of registration is more complete and the results more to be depended on, I shall rather refer to the different modes adopted for the collection of mortuary statistics, to the opinions which have been expressed by the different Sanitary Commissioners on this important subject, and to any suggestions which they have made for improvement.

[*] Page 102.
[†] Page 103.
[‡] Pages 101, 100, 34, 31, and 22.

Mode of collecting mortuary statistics, Madras.

7. In Madras the system of registration differs from that in force in any part of this Presidency. There, in the rural districts, the village accountant keeps the record of deaths occurring in his village, and transmits to the Collector of the district, through the *talook* authorities, a monthly abstract. Each *talook* of a district has been constituted a registration circle. Municipal towns where they exist represent town circles of registration, and the collection of vital statistics in them devolves on the municipalities. "In some districts," Dr. Cornish observes, "more attention has been paid to the registration than in others, but in the course of a year or two I hope the vital statistics of this Presidency will become fairly reliable. Nothing more seems requisite for the perfection of the machinery in the mofussil than a better system of inspection of village registers and the willing co-operation of heads of villages and village accountants. These persons should be made to understand that accuracy and fidelity in the keeping of the village register of births and deaths is as important a matter in its way as accuracy in any other of the village accounts." The registration, he admits, can as yet be regarded as only approximately correct; but with reference to the very low ratios of mortality shown for certain districts, he remarks: "It is, no doubt, the case that Indian populations, where food is abundant and moderately priced, and in the absence of epidemics, experience very low death rates."

North-Western Provinces.

8. The Report for Bombay contains no special remarks regarding registration; and in the absence of any Report from Bengal Proper there is no account of the difficulties which have been met with in introducing the system in that part of India, or what measures have been adopted to overcome them. In the North-Western Provinces formerly the plan was for the chowkeedar or rural policeman to report the deaths occurring within his beat to the *putwaree* or village accountant. This official forwarded the Report to the tehseeldar or native revenue officer, and by him it was transmitted to the Collector of the District. From the 1st October 1870 a new system has been introduced. The police circle was declared to be the unit of rural registration, and the chowkeedars have since then reported to the police office of their circles. The registration in municipal towns is left in the hands of the municipalities. The returns from these different towns and rural circles are forwarded to the Civil Surgeon of the District, who is declared to be the District Registrar, and whose duty it is to transmit the registers to the Sanitary Commissioner, who is *ex-officio* Registrar for the Province. Latterly, a district mortuary clerk has been attached to the Office of the Civil Surgeon. Dr. Planck observes that, even after reducing the number of circles as far as possible, the work assumes a magnitude which is somewhat alarming, and the volume of annual statistics for 1871 will, he fears, be larger than convenient. His attention was being devoted to determine the population of each circle and its accurate geographical position, with a view to prepare a special map to illustrate the mortuary statistics. Some improvement had already, he believes, been made in the registers, but nothing like absolute accuracy will, he fears, ever be attained until the head of the family in which a death occurs is obliged to report the circumstance to the police office.

Punjab.

9. In the Punjab many of the municipalities have adopted this method for ensuring greater accuracy in the registration, and have, with the sanction of the Government, introduced a bye-law into their regulations, which lays the responsibility of reporting both births and deaths on the head of the family. The registration, the Sanitary Commissioner believes, received more attention in 1870 than it had done previously, but the special enquiries which were instituted in certain towns afford evidence that it was still very far from accurate. At Delhi a comparison of the returns of the burial grounds and burning places with the mortuary registers leads to the belief that about seven per cent. of the deaths escape registration. The new form of returns was introduced with the beginning of 1871.

Oudh.

10. In Oudh, during the first half of 1870, deaths were reported by the chowkeedars to the thannas or police stations. From the 1st July the daily registers for each village has been kept by the *putwaree* or village accountant. At the end of each month these village lists have been transmitted to the police station, where the return for the circle has been prepared. Dr. Whishaw, the Officiating Sanitary Commissioner, expresses his opinion that during the last half of the year, under the new system, the results have been more correct. The agency of the *putwaree*, however, is found to be open to objection, and the returns will in future be based on the verbal reports of the village watchmen made on their periodical visits to the police station.

Central Provinces.

11. In the Central Provinces in 1870 registration was extended over a larger area than in any previous year, and included the whole Province, with the exception of some interlying feudatory States and tracts of hill and forest country. Of the Central Provinces little more than one-fourth is under cultivation; the population is widely scattered over a large area, and the difficulties of registration under such circumstances are exceptionally great. The work has devolved entirely on the police. With regard to the working of the system, Dr. Townsend observes, that in several of the districts it had been fairly efficient throughout. In the majority fair averages from many circles had been vitiated by imperfect returns from the sparsely-populated tracts. Special remarks are made on the results for each district, and the attention of the authorities in each case has been directed to them by the Chief Commissioner. All municipalities are now empowered to require by their bye-laws that the heads of families shall report the occurrence of any birth or death that may take place. The Sanitary Commissioner remarks: "It cannot be expected that the work will be brought to perfection in a short time, but I believe that, if proper attention is paid to the subject, a very fair knowledge of the average birth rate and death rate of the population, and of the variations in the prevalence of the more marked epidemic diseases, may be obtained."

British Burmah.

12. The few facts regarding mortuary registration, which are given in the Report for British Burmah, refer, as I have already mentioned, only to 17 of the principal towns. Steps were, it is noted, taken to introduce the system of registration throughout the whole Province; the Reports supplied by local officials being furnished to the district officers were forwarded, through the Civil Surgeon, to the Sanitary Commissioner, but the records were received with great want of punctuality, and it was found impracticable to summarize the results. The Monthly Returns for 1871 were, it appears, being furnished with an increasing approach to regularity.

Registration of births.

13. In Madras, the Punjab, the Central Provinces, and British Burmah, births have been registered as well as deaths. In the other Provinces the registration of births had not been attempted. In Madras the Sanitary Commissioner reports that in this attempt a greater amount of success had been attained than could reasonably have been anticipated. During the latter half of the year there had been considerable improvement in this particular. In the Punjab the attempt

as yet has been limited to 104 towns. In order to attain greater accuracy under this head, the Municipality of Delhi have made it obligatory on *dhaies* or native midwives, who are always in attendance on such occasions, to report all births at which they may be present—an obligation which, however, does not relieve the head of the family from making his report. Although the birth rate given for the Central Provinces in 1870 amounts only to 18·5, and is manifestly much below the actual addition to the population, the rates for several of the districts and circles show that it is quite possible to bring the registration of births to a fair degree of accuracy.

Endeavours generally being made to improve vital statistics.

14. A review of the registration during 1870 affords evidence to show that, while the returns are still far from accurate, the Sanitary Commissioners are fully impressed with the importance of the work, and that an earnest endeavour is being made to obtain more correct results. A great step has been made in introducing the system into the Lower Provinces; and, although the returns from this, as well as from other parts of the country, abound in errors, they already contain very valuable information regarding the distribution of epidemic disease, and especially of cholera. A system of statistics which is altogether new cannot at once attain even an approach to accuracy, and it is only by patient perseverance and by gradually educating the people to appreciate the value and importance of the information desired that success can ever be hoped for.

Section II.—History of the chief diseases during the year.

A.—Cholera.

15. The year 1870 was remarkable for the comparative absence of cholera in Upper India. There were very few cases among the European troops, fewer than in any one of the previous ten years. The native soldiers and the prisoners also as a body preserved a singular immunity from the disease; while the statistics of the general population, as given at pages 20 to 22 of my Annual Report, show that over great part of the country cholera had been more than ordinarily dormant—a dormancy which contrasts remarkably with the epidemic prevalence of the year previous. The disease had prevailed, as indicated in the map attached to the Annual Report, in the eastern districts of the North-Western Provinces and adjoining portions of Oudh; and, although no mortuary statistics had then been received from Bengal, there was evidence from the history of the prisoners in those parts of the Lower Provinces to lead to the belief that in the districts of Chota Nagpore and portion of Behar the population generally had suffered also.

Deaths registered from cholera in the Lower Provinces from July to December 1870.

16. The returns since compiled by the Sanitary Commissioner of Bengal show that this supposition was correct; and the history of cholera in these parts of the country, which lie on the confines of the epidemic area, are of so much importance that I shall here summarize these statistics from the 1st July, on which date they commenced to be rendered.

Statement showing the deaths registered from cholera in the Districts of Bengal Proper during the second half of 1870.

DISTRICTS.	NUMBER OF CHOLERA DEATHS REGISTERED IN EACH MONTH.						
	July.	August.	September.	October.	November.	December.	TOTAL.
Chittagong	103	67	5	9	32	31	247
Noakhally	33	6	......	... ..	6	2	47
Baukergunge	19	9	6	2	30	5	71
Dacca	......	4	6	5	4	4	23
Tipperah	... .	......	4	11	9	3	27
Cachar	3	1	1	1	1	......	7
Sylhet	97	Return not received		......	.... .	.....	97
Mymensing	......	Ditto					
Goalpara	19	1	4	3	......	1	28
Durrung	Return not received						
Nowgong	Ditto		5	1	4	2	12
Seebsaugor	32	5	2	3	5	1	48
Kamroop	Return not received		3	...	1	Return not received.	4
Luckimpore.							
Jynteah Hills	Ditto						
24-Pergunnahs	68	52	31	8	11	5	175
Howrah	Return not received		......	... ..	......	9	9
Serampore and Hooghly	26	21	30	10	9	22	118
Burdwan	22	42	8	2	1	1	76
Moorshedabad	59	30	4	4	1	2	100
Kishnaghur	11	7	1	1	2	4	26
Jessore	40	10	3	3	1	.....	57
Furreedpore	......	......	......	2	......	... ..	2
Pubna	2	1	3	......	2	6	14
Rungpore	5	8	9	10	11	11	54
Dinagepore	16	12	4	2	2	5	41
Bograh	Return not received		......	3	1	2	6
Rajshahye	24	1	4	1	17	20	67
Maldah	14	......	1	1	1	1	18
Pooree	399	87	4	5	22	9	526
Cuttack	306	89	19	3	37	31	485
Balasore	39	5	......	......	65	3	112
Midnapore	Return not received	14	2	9	2	29	56
Baucoorah	55	10	1	1	......	......	67
Sooree	Return not received		1	5	2	......	8
Rajmehal	Ditto		......	15	......	......	15
Deoghur	10	7	8	9	4	......	38
Purulea	130	74	10	3	1	1	219
Hazareebaugh	127	107	38	1	......	1	274
Ranchee	97	316	95	111	2	2	623
Chyebassa	28	21	7	......	......	1	57
Darjeeling	Return not received		......	1	......	......	1
Julpigoree	Ditto	10	2	2	3	9	26
Purneah	Ditto		......	......	5	......	5
Monghyr	253	299	45	26	10	... ..	642
Bhaugulpore	11	......	1	1	7	... ..	20
Gya	103	135	21	22	1	5	287
Patna	203	264	28	21	6	18	630
Shahabad	103	56	8	2	... ..	2	171
Sarun	99	361	107	34	38	3	642
Tirhoot	186	103	35	17	10	......	351
Chumparun	178	7	51	138	......	.....	374

Cholera in the North-Western Provinces.

17. In the North-Western Provinces, the Sanitary Commissioner states that the epidemic prevalence of cholera in 1870 was confined to Goruckpore and Bustee only,—two districts which lie beyond the river Gogra, and form together a tract of country which is conterminous

with the Sarun District of Bengal on the east and the Gonda District of Oudh on the west. But the returns show that in the districts to the west of the Gogra also, Azimgurh, Mirzapore, Benares, Ghazeepore, and Jounpore, the disease was active. Further particulars regarding the cholera which affected the population of this large area of the North-Western Provinces would have been interesting, and might have served to throw some light on the manner in which the disease is distributed. Dr. Planck remarks that a few deaths are reported from nearly every district in the Province, and that "there is no doubt that sporadic cases do occur in every district in every year." The persistence with which deaths are ascribed to cholera in some of the higher districts of the North-Western Provinces—districts such as Moradabad, Shahjehanpore, &c., which are remarkable for their healthy character—necessitates some enquiry on the spot, such as the Civil Surgeon might easily institute. This officer has in the North-Western Provinces been appointed Registrar of his district; and it is very desirable that he should, if possible, ascertain whether cases of this nature, which are reported from month to month, even during the most healthy season of the year, are really due to the cause to which they have been ascribed.

Cholera in Oudh.

18. A considerable portion of Oudh, that lying adjacent to the part of the North-Western Provinces where cholera prevailed, also suffered to a considerable extent. The ratios of deaths from this cause, as given in the Annual Sanitary Report for 1870, are in excess of those which were extracted from the monthly statements, and appeared in my Annual Report. They are—

For Sultanpore .. ,, ...	12·15 per 10,000
Fyzabad	22·85 ,,
Gonda	51·23 ,,
Baraich	15·04 ,,
Seetapore	20·05 ,,
Bara Bunkee	10·40 ,,

"It would seem," Dr. Whishaw observes, "as if the disease spread from district to district in regular order from Gonda to Sultanpore." The Deputy Commissioner of Gonda states that "the disease was apparently brought from the Allahabad fair in January 1870." As regards Bara Bunkee, it is supposed to have been imported from the adjacent district of Seetapore, but no evidence is adduced to support these opinions. In Fyzabad the Civil Surgeon, while acknowledging the impossibility of tracing the progress of the cholera, remarks that it appears to have sprung up simultaneously in different directions and in places widely apart.

Cholera in the Punjab.

19. In nearly all the districts of the Punjab some deaths from cholera were reported; but the Sanitary Commissioner is of opinion that in all probability few were genuine cases. The total registered was only 469, the smallest number since registration commenced. In only one place did it assume an epidemic form, and that was in the village of Ghelab in Goorgaon, the most southern district of the Province. The circumstances were investigated by the Deputy Commissioner, who reported that the first case was that of an old woman returning from Muttra, who was taken ill on the road about the 6th June, and died within a few hours after she reached her home. Next, some of her relations and neighbours were taken ill. In all 43 persons were carried off in 13 days.

Cholera in the Central Provinces.

20. Compared with 1869 the Central Provinces in 1870 enjoyed a remarkable immunity from cholera. In the first of these years the deaths registered from this one cause numbered nearly 60,000; in the second of them the number was only 107. In only three places did the disease assume any violence; these were in the Kawarda territory, a dependency of the Belaspore District, where it appeared in the month of March, in the Hosungabad and Upper Godavery Districts. In the first of these, 69 deaths are reported to have occurred; but as the tract of country is not under direct Government management, it furnished no mortuary statistics. Of the total of 107 deaths from cholera entered in the returns, 58 occurred in the Hosungabad and 32 in the Upper Godavery District, leaving only 17 to be accounted for in other portions of the Province. From a consideration of all the facts of the year, which are very carefully detailed in his Report, Dr. Townsend is confirmed in the opinions regarding cholera which he has previously expressed. The remarkable diminution in the prevalence of cholera over the Central Provinces in 1870 is not to be ascribed, he believes, to the absence of the cholera poison, but to the want of a pre-disposition on the part of the inhabitants. He observes—

"79. It would appear, then, that there is something besides the presence of the choleraic influence necessary for the production of an epidemic of cholera; there must be present at the same time not only the poison but a certain proportion of the population pre-disposed to be affected by it. That the spread of cholera is very much dependent on the presence of some local condition which acts upon the people as a pre-disposing cause is, I think, rendered evident by the very great variation in the proportion of people affected by it. One village may lose 10 or 20 per cent., or even half its population, while another, a mile off, will not lose one per cent., or escape altogether, and even in the same town or village the population of one portion will suffer while the remainder will continue free.

"80. Investigations into the causes of these great variations in the proportion of persons pre-disposed to suffer from cholera led me to the conclusion that, as regards the native population of this Province, the use of impure water was the chief condition under which this pre-disposition was produced. In individuals here and there, or in bodies of men placed under peculiar and unnatural conditions, this pre-disposition may have no connection with the use of impure water; but where cholera visits severely any considerable portion of the population, impure water will be the pre-disposing cause.

"81. This conclusion was based on the following facts:—

"That in these Provinces, where the climate from December to May is hotter and drier than in any other Province, and where the drainage is everywhere rapid, cholera is usually most severe in the hottest and driest time of the year, when much of the water-supply of the Province annually becomes scanty and impure.

"82. That in the hot weather of 1869, when, owing to the scanty rain-fall of the preceding season, the country was suffering from severe drought, and the temperature was far above the average, cholera raged with unexampled violence.

"83. That in the hot weather cholera raged with the greatest violence in districts and parts of districts in which the drought was most severe, and in which the water-supply is more exposed to the action of the sun and rapid evaporation.

"84. That in districts and parts of districts in which the water-supply is more abundant and less readily affected by drought, the prevalence of cholera was comparatively slight in the dry weather, and reached its maximum of prevalence in the height of the rains, when the water in the wells was nearest the surface.

"85. That the rise and fall of cholera is not dependent on any particular condition of atmosphere; for although it was more widely spread, and more places were brought under its influence in the hot and dry weather, yet it occasioned as great an amount of mortality in certain populations that it attacked in the rains. The poison was equally virulent and fatal when the mean temperature was 77° and the relative humidity from 70 to 80 as when the mean temperature was 97°, and the relative humidity 10 or 20 (saturation being equal to 100).

"86. That the rise and fall of cholera is not dependent on any particular condition of soil, for it may occasion as great mortality in a population that it attacks in the rainy season, when the surrounding country is saturated with moisture, as when it attacks in the hottest weather a population inhabiting a rocky plateau.

"87. That climatic conditions of temperature, moisture, and rain-fall do not directly affect the prevalence of cholera by increasing or diminishing the development of the poison, but indirectly, by their action on the water-supply of the locality.

"88. That the season of the year in which cholera shall prevail in a town or village is determined by the nature of its water-supply; if the supply is derived from rivers, streams, nalas, or excavations in the ground, it will prevail in the hot weather, not in the rains, after the rivers and streams have been flooded. If the supply is drawn from tanks or from small surface-wells receiving the surface drainage of an inhabited area, cholera will prevail soon after the rains have set in. If the supply is drawn from deeper wells, cholera will reach its maximum of prevalence when the water in the wells approaches the surface of the ground, the extent to which cholera shall prevail in such localities depending in a great measure on the degree of porosity of the soil and sub-soil."

After examining the facts of 1870 in connection with these opinions, he concludes:—

"100. The study of cholera in a year during which the Province has experienced almost complete immunity, and of the climatic and other conditions which coincided with that immunity, bring us to the same conclusion as was deduced from the facts attending the rise and decline of the aggravated epidemics of the previous years. That the choleraic influence is diffused by means of human intercourse, but that for the manifestation of the disease there must be a susceptibility to the action of the poison on the part of the individuals to whom it is applied. On the basis of this conclusion I have endeavoured to explain the quiescence of the disease during the year under review. But while I believe that this quiescence is in a great measure the natural consequence of the greater activity during the preceding year, the fact that it was more complete in 1870 than in any previous year, regarding which we have any reliable information, and that we have now passed over the hot weather of a second year without witnessing any re-awakening of the disease in epidemic activity, affords ground for hope that the action of the administration in suppressing one great fair and changing the dates of holding many others, and also in directing attention to the improvement of the water-supply generally throughout the country, is working good and prolonging the immunity of the people from a scourge which for ten years previously recurred in every year, with the exception of 1867."

Importance of Dr. Townsend's practical conclusions.

21. Dr. Townsend's opinions, based as they are on a careful investigation of facts which have come more or less under his own immediate observation, are well deserving of attention. The question of the connection between the epidemic spread of cholera and human intercourse must be studied, not only in relation to the circumstances attendant on particular out-breaks, but also with reference to the simultaneous history of cholera over large areas, and on this subject I shall have more to say in relation to the events of 1871. But whatever differences of opinion may exist as to these and other theoretical questions, there can be no doubt that the improvement of the water-supply of the towns and villages in which the Government of the Central Provinces has taken special interest is a sanitary measure of the greatest practical importance, and one which is calculated to have the best influence in diminishing cholera.

Cholera in British Burmah.

22. Cholera did not prevail to any extent in British Burmah. In the Southern or Tennasserim Division of the Province, only two deaths were reported as due to this cause, and these are considered doubtful. In the Northern or Arracan Division, there were 378 ascribed to cholera;

and in the Pegu or Centre Division, where the disease was most severe, the number amounted to 2,003. In regard to some of the cases, the Sanitary Commissioner leans to the opinion that the out-breaks were due to human intercourse, but no facts are adduced in support of such a conclusion. In other instances, no such idea seems to him to be tenable consistent with the facts. With regard to its prevalence over the Myanoung District of the Pegu Division, he observes :—

"9. The rapidity with which cholera spread through sixteen townships of this extensive district was so great as to have rendered its appearance almost simultaneous, in many of them far removed from each other, and to have precluded altogether the possibility of tracing its course. If man was the agent by which the malady was enabled to propagate itself, the rapidity of its progress through so thinly inhabited a country is simply marvellous, while it is totally irreconcilable with the mildness of the epidemic and the improbability of the water-supply of the valley of the Irrawaddy being contaminated to any poisonous extent in the height of the south-west monsoon. The theory of this disease being alone communicable from man to man, by the introduction into the system of one of some morbid organism which has quitted the system of another, would seem to be supported by its appearance and progress in Arracan ; but on the other hand, its erratic wanderings in the Myanoung District can best be accounted for by acceptance of the view that cholera bears a strong resemblance in its propagation to malarious fevers."

Necessity for having a map to illustrate the history of cholera every year.

23. None of the Reports of the Sanitary Commissioners with the Local Governments and Administrations for 1870 contain any map to indicate the distribution of cholera throughout the year. This omission may, to some extent, be due to the comparative absence of the disease ; but it is very important that the particulars from year to year should be placed on record in such a convenient form, and that the absence as well as the prevalence of the disease should be thus plainly indicated from year to year for comparison and study. In some degree also the omission may, perhaps, be due to the fact that the old plan of map had been found too cumbersome, and that the question of the best form of map for illustrating the main facts with regard to cholera in each province was known to be under the consideration of the Government.

Cholera in the Madras and Bombay Presidencies.

24. Before leaving the history of cholera in India during 1870, it will be well to glance at the main facts regarding the Madras and Bombay Presidencies in that year. The Bombay Report does not add much to the statistics which have been already given in my Report. These show that the disease, although not very severe over any large tract of country, prevailed in several of the districts, particularly those of the Southern Division. Bombay itself also suffered to a slight extent. The prevalence everywhere was greatest during the later months of the year, presenting in this respect a contrast to 1869, when the disease was most rife in May, June, and July. Of the general history of cholera in Madras, Dr. Cornish, the Sanitary Commissioner, remarks : "The invading epidemic of 1869, which by the end of that year had got so far south as Tanjore and Trichinopoly, passed on the southern districts of Madura and Tinnevelly. It also travelled on to Ceylon, and, having rounded Cape Comorin, became very prevalent in the Travancore Province. In the North Arcot District, Madras, Salem, and some other districts affected in the former year, it was reproduced, but the most northern parts of Madras territory,—Kurnool, Bellary, and Cuddapah,—were left quite free. The intensity of cholera in certain districts which had been invaded in the previous year was, I believe, much increased by out-breaks at pilgrim shrines, particularly at Tripatty and Conjeveram. At the end of the year cholera had gradually declined, though a reproduction occurred in a few of the southern districts."

B.—Small-pox.

25. In all the great divisions of the country, excepting the Madras Presidency, cholera in 1870 caused a mortality greatly smaller than it had caused in 1869. But in every one of them the deaths from small-pox in 1870 showed a marked decline from what they had been in the year previous. The results are very striking, as may be seen from the following comparative statement :—

Deaths from small-pox.

	1869.	1870.
Madras ...	17,448	11,252
Bombay ...	12,673	4,606
North-Western Provinces	90,770	23,564
Punjab ...	53,195	27,163
Oudh ...	21,564	11,048
Central Provinces	16,849	2,348
Berar ...	6,365	1,394
British Burmah ..	1,037	188
TOTAL ...	219,901	81,563

Dr. Cornish observes that in Madras "the deaths from small-pox sunk lower in 1870 than in any previous year since mortality has been registered."

Monthly incidence of the disease.

26. The monthly incidence of the disease was tabulated in my Annual Rport so far as the data were then available; but as the subject is one of much interest, I shall here reproduce that statement adding the details for the Madras and Bombay Presidencies, which could not then be given—

Statement showing the deaths from small-pox registered in different parts of India in each month of 1870.

PROVINCE.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	TOTAL.
Madras ...	836	1,016	1,106	885	907	771	929	911	936	1,007	740	1,208	11,252
Bombay ...	275	366	650	622	656	499	361	305	244	225	182	221	4,606
Bengal ...	...	No	statist	ics.	...	...	*427	378	265	150	132	106	1,458
N. W. Provinces...	1,240	1,080	2,212	2,961	5,127	3,993	2,379	1,350	894	708	521	1,099	23,564
Punjab ...	2,778	3,038	3,362	3,582	4,445	3,843	1,987	902	543	881	821	1,981	27,163
Oudh ...	376	437	1,003	1,459	1,556	1,445	1,300	873	741	767	618	473	11,048
Central Provinces...	161	177	319	329	278	251	250	246	127	73	69	68	2,348
Berar ...	30	49	77	130	305	188	215	132	140	73	28	32	1,394
British Burmah ...	...	No	statis	tics for	month	s.	...	...	...	...	...	...	188†

Portions of each province chiefly affected.

27. The North-Western Provinces' Report shows that the deaths registered as due to small-pox were most numerous in parts of the Rohilkund and Mirat Divisions. In Kumaon, Gurhwal, and the Terai, where the labors of the Vaccination Department have been most successful, the disease was almost unknown. The comparative immunity of Lucknow, as compared with the statistics of the Province generally, appears to show that the work of the vaccinators, which had been for some time confined to the city, was productive of much benefit. Its extension to other towns and to the rural population generally is a matter which deserves attention. The Sanitary Commissioner of the Punjab records the important fact that, of all the fatal cases of small-pox registered in that Province, more than 97 per cent. were in children under ten years of age. The statistics of the six years during which registration of deaths has been in force in this part of the country, show the annual rise and fall of this disease with singular uniformity, the gradual increase in the early part of the year, the maximum in May, and the gradual decline till the minimum is reached in October. This fact alone is sufficient to show that however defective the mortuary statistics may be in details they contain general truths of no small value. In the Central Provinces, the severity of the disease was confined to the districts of the Satpuras, and of these Chindwarra suffered most. Here the average ratio of mortality from this cause was two per 1,000; but in the town of Lodikhera it was nearly five. The annual standard tables do not provide for showing the ages at which deaths occurred from various diseases, but such a detail regarding the mortality from small-pox as has been given by the Sanitary Commissioner of the Punjab would be of much interest.

C.—Fevers.

28. Omitting "bowel complaints," "injuries," and "all other causes," the statistics of which, so far as they are available, have been already tabulated in my Annual Report, and the particulars regarding which are too imperfect to admit of any proper comparison between the results in different provinces, the only other class of diseases which calls for special mention is "fevers." Fever in India presents a subject of unusual interest and importance. Its geographical distribution each year, its periods of prevalence and decline, its history in particular localities taken in connection, not only with the local condition of these localities, but also with the statistics of the whole continent, and an examination of all these data in relation to the concurrent history of other epidemic diseases, and especially of cholera, present materials for attentive study which have as yet been but little examined on that broad basis which is essential for any satisfactory investigation. Unfortunately, the errors which more or less vitiate all the heads of mortuary statistics affect the item of "fevers" more than any other, and this is a defect which, in the present state of things, admits of little or no remedy. The people who are called upon to register the cause of death are not only quite unable to distinguish between different forms of febrile affections, but deaths are often recorded as due to "fevers," which ought properly to be included under other causes. Still there can be no question that to fever, and especially that form of the disease which is generally known as malarious fever, may be ascribed a very large proportion of the sickness and mortality from which the people suffer, and the fact, that in many instances, an unusual proportion of mortality from this cause has been registered at a time when malarious fevers were extremely prevalent among the troops and prisoners, shows that the data regarding the general population under this head, although far from strictly accurate, often contain a large element of truth.

Information wanting regarding fever in Bengal.

29. In the absence of any Report from Bengal Proper, no information can be given regarding the great prevalence of fever over certain districts of the Lower Provinces, where for some years the sickness and mortality due to this cause have been very great. This

---

* These figures differ somewhat from those furnished previously by the Sanitary Commissioner.

† For 17 towns only.

fever has long occupied the anxious attention of the Government, and every endeavour has been made to ascertain, as far as possible, the cause of the malady, but data seem still wanting to warrant any very decided conclusions. In January last, the Officiating Sanitary Commissioner was deputed to conduct a fresh investigation, especially in the Burdwan District, which, though comparatively late in being attacked, has suffered severely. I shall defer offering any remarks on this most important question until I have had an opportunity of reading Dr. Jackson's Report.

Fevers in Madras in relation to the question of their being caused by irrigation.

30. In the Report of the North-Western Provinces fevers are discussed at considerable length, especially with reference to their prevalence in parts of the country irrigated by canals—a subject of very great practical importance; but, before examining the facts recorded by Dr. Planck, I shall revert to some interesting information on this point, which is given by the Sanitary Commissioner of Madras. Speaking of 1870, he observes that the actual deaths registered as due to fever are about 30 per cent. of the whole mortality, and, were the indirect effect of malarial poisoning also taken into the account, he believes that one-half of the mortality in that part of India may be properly ascribed to malarious influence. An examination of the proportion in which this mortality affects the different districts of the Madras Presidency shows that there is really a lower ratio of deaths from fever in the great irrigation districts of Godaveri, Kistna, Tanjore, and Trichinopoly than in the dry upland districts in the interior of the country, such as Bellary, Kurnool, Salem, and Coimbatore. This statement is modified in a subsequent paragraph, from which it appears that "the Godaveri District has of late years undoubtedly suffered, at a certain period of the year, from a malarious fever, which has been very destructive to the population." At the same time it is to be observed that the hilly and upland tracts of this district are subject to a periodical increase of fever mortality, just as much as the irrigated lands in the delta of the Godaveri. The statistics of the different tracts of this district, taken separately, fully bear out this statement, and show, indeed, that in those which were irrigated the people suffered from fever less than those in the others which were not irrigated. Dr. Cornish is of opinion that the results are influenced to a great extent by the free exposure to the sea air; but whatever may be the cause, there seems to be no question about the fact that in the southern districts of Madras, where irrigation is practised to the fullest extent, the fever death rates are low compared with those in other parts of the country. From this Dr. Cornish concludes, and the conclusion appears to be fully warranted by the evidence, that irrigation is by no means necessarily inimical to health.

Fevers in the North-Western Provinces.

31. Of 480,000 deaths registered in the North-Western Provinces in 1870 no less than 322,000 were recorded under the head of fever. The six districts in which this mortality was most severe, Dr. Planck remarks, are peculiar, in being more or less irrigated by canals. In November 1869, a conference of officers was assembled at Mirat to consider the unusual and increasing suffering of the population of the Saharanpur and Muzaffarnagar Districts from fever, and to devise practical measures for its alleviation. With this view it was resolved that a special survey of these districts should be undertaken to determine how the natural drainage channels could be made more efficient, and that, in the meantime, canal irrigation should either cease, or be limited, wherever the level of the sub-soil water was at any time of the year less than ten or twelve feet from the surface. In connection with this enquiry the Sanitary Commissioner was also deputed to visit a given tract of country, which embraces both irrigated and non-irrigated areas, to enquire into the conditions under which the people live, and to report on their comparative state of health. The results he has tabulated regarding 34 villages, and the conclusions at which he has arrived, are as follows:—

"356. From the above statement: *First*, this fact appears, namely, that fever disease troubles the people everywhere, both in canal irrigated and canal unirrigated country. I trust no misapprehension on that score will arise, or the opinion be entertained that fever disease here is a new thing, due only to canal irrigation, for I have no doubt whatever that the very same form of fever disease which troubles the people now in the Muzaffarnagar District troubled them long before canal irrigation was introduced; nay I believe this form of fever prevails in every district of the province in the autumn months, and I am not at all sure it is not more fatal every year in the moister districts, as the Terai and Goruckpur, than in the canal irrigated country.

"*Second*, this fact appears that the form of fever with which we have to deal is more persistent in its prevalence, more virulent, and therefore, more fatal in its results in the canal irrigated country than in the country not irrigated by the canal, unless the latter should be naturally a very moist country. Indeed, nothing can be more marked as a rule than the difference in the aspect of the people as seen at these inspections, who live where the well water is found at more than 30 feet from the surface, and where it is found at less than 15 feet.

"*Third*, this fact appears that filthiness is common to all the villages, and cannot, therefore, be the cause of the prevalence of ague, otherwise it should prevail equally in all the places inspected, and the people should all have the same unhealthy aspect.

"*Fourth*, this fact appears that the most unhealthy people of all are those who live in places naturally moist, the moisture of which has been increased by canal irrigation, as at Guddee Doobhur and its neighbouring towns and villages, in low land irrigated from the Jumna Canal, and at Ghalubpur, Jhundhere, Jutan, and Jusoulah, with many others in the Nagul Khadir.

"357. Considering these facts, I think we may justly arrive at the opinion that ague has not been introduced as a new thing into the canal irrigated country, but that its area and period of prevalence and its intensity of attack have very greatly increased since irrigation from the canals was introduced; this prevalence and intensity being very fairly measurable by the increased moisture of the soil, and, consequently, of the atmosphere, denoted by the height of permanent rise in the spring level at any given place, a rise which no man can doubt must be due to canal irrigation.

"Indeed, I do not understand how it can be expected that ague shall not increase when moisture increases, seeing how inseparably connected they are. Take the case of the general population of this Province. For eight months in the year, when all the country is dry, away from the canal irrigated or moist Terai countries, it is unusual to find a case of ague in any village; for four months of the year, when all the land and air is moist, it is difficult to find any village in which persons are not suffering from ague, and this suffering more general and more lasting and fatal as the rain-fall of any year is greater or late, so that its drying up is delayed. The past year, 1870, was a year of great and late rain-fall, and ague prevailed accordingly, especially in villages like Kotesruh, where the rain-fall is able to stagnate in wide-spread surfaces. But I do not think it will be possible to find the people permanently debilitated or commonly afflicted with enlargement of the spleen in any village or town where the water in the wells stands at a considerable distance from the surface, and where, consequently, canal irrigation is not practised, or practised only so sparingly or partially as to have little raised the spring level.

"That is my impression, the result now of considerable experience; but the records in process of gathering by the district civil officers of Saharanpur and Muzaffarnagar will determine this question."

Importance of proper drainage in connection with irrigation works.

32. How far the results are to be ascribed to local conditions and how far to general causes which determined a great prevalence of fever over certain parts of the country, not only in the North-West, but also in other Provinces during the year 1870, is a matter regarding which there may be difference of opinion, but it cannot be doubted that proper drainage is a most important sanitary improvement, and one of special value in diminishing malarial disease; that this improvement is required in irrigated as well as in non-irrigated tracts, and that, so far from a proper system of drainage being incompatible with irrigation works, it is essential for complete success that the two should proceed hand in hand. In a recent resolution by the Government of the North-Western Provinces, orders* have been issued for the better drainage and improvement of the Saharanpur and Muzaffarnagar Districts, for opening up the natural out-falls, and for draining a number of swamps.

Fever in Oudh.

33. In Oudh, the Officiating Sanitary Commissioner remarks that malarious disease is a principal cause of mortality. Much of this sickness he attributes to the presence of *jheels* or swamps which, along with tanks, are said to cover an area of 1,320 square miles within the Province. This evil influence, he also believes, is "extended much more when the *jheel* water is used in rice cultivation than when water is used for the irrigation of most other crops," but this statement is not supported by any evidence. Rice cultivation has long been denounced as most inimical to health; and not long ago, indeed, any form of cultivation within cantonments, or even in the immediate neighbourhood, was considered dangerous to the troops. Still it is a fact that, in many districts of India, people living in the midst of rice cultivation enjoy excellent health. Results may differ in different parts of the country; and it is very desirable in comparing the statistics of rural circles in future returns that the nature of the cultivation in each should be taken into account. By such a critical examination of the death rates the baneful influence of swamps may also be demonstrated beyond all doubt, and the importance of drainage satisfactorily proved both to the people themselves and to the authorities.

Fevers in Punjab.

34. In the Punjab, the mortality from fevers was higher even than it had been in 1869. The ratio of deaths ascribed to this one cause equalled 15·74 per 1,000 of the population. With reference to this result, Dr. Fairweather, the Officiating Sanitary Commissioner, remarks—"It thus appears that in a year considered by all as a non-malarious one, nearly two-thirds of the entire mortality of the Province arose from fevers." But 1870 is by no means rightly regarded as a non-malarious year. In my Annual Report, when discussing the chief diseases from which the European troops suffered, I showed that the admission rate from fever was higher than it had been in any year since 1858. "In the Punjab," I remarked, "the disease was widely spread—Ambala, Ferozpur, Multan, and Sealkote were exceptions; but, as a rule, the European troops in this Province suffered greatly. At Atak, Nowshera, and Peshawar, the proportion of admissions—1,920, 2,136, and 3,067 per 1,000 was very high." This statement, on the whole, is borne out by the registration from deaths from the same cause among the general population of the Punjab.

Fevers in the Central Provinces.

35. In the districts of the Satpura Hills, according to the natural divisions of the country adopted by the Sanitary Commissioner of the Central Provinces, fever was remarkably prevalent, and this was specially the case in Baitul and Chindwarra. The death rate for the Province under this head was 11·6 per 1,000 compared with 14·1 in the year previous. In both years the rain-fall was generally above the average, particularly the rain-fall of the months of September and October; and to this cause the people ascribed the unusual prevalence of fevers both in 1869 and 1870. Dr. Townsend's remarks on the circumstances which attend the seasonal prevalence of fever in

---

* Supplement to *North-Western Provinces' Gazette*, dated 4th May 1872.

the Province are of much interest. He observes that the increase of the disease does not depend on any changes in the temperature and moisture of the atmosphere. The heat and extreme dryness of the air in June are usually succeeded by a diminished temperature and a degree of humidity which approaches saturation, but at this time, and for some time afterwards, there is no increase of fever. The disease, he believes, to be intimately associated with the condition of the soil and the sub-soil. "Ague is most rife when the rains are ceasing or have ceased, when the sub-soil water is at its highest level, and, without receiving any further addition from rain-fall, is retained at a high level by percolation downwards from the more superficial strata, and when the streams and nalas, no longer swollen and flushed by the superfluous rain-fall, are fed only by percolation through the soil and sub-soil." The opinion long entertained that water may dissolve the miasmatic poison, and thereby cause fever, receives support from his investigations. It is in this way he is inclined to believe that the population dwelling on rocky plateaus so often suffer severely, for their water-supply is drawn almost invariably from the low ground, where it is subject to all the conditions likely to favor its contamination by any impurity washed into it through the soil.

The mortuary statistics of the general population as a whole bear out the well ascertained facts regarding the troops and prisoners in a remarkable manner.

36. Before leaving the subject of vital statistics and the history of the chief diseases in 1870 which they illustrate, I would observe that the returns from the different Provinces bear out, in a remarkable manner, the general history of the year as indicated by the well ascertained facts recorded regarding the sanitary condition of the troops and prisoners. In my Annual Report I remarked that the main characteristics of 1870, so far as this Presidency was concerned, had been a remarkable diminution of cholera and small-pox, and an unusual prevalence of fevers in certain parts of the country. And these main characteristics, indicated by the statistics of bodies of men which are collected and tabulated with the greatest accuracy,—statistics the correctness of which cannot be called in question,—are found repeated in the mortuary records of the general population. With all their imperfections, therefore, it must be admitted that the registration of deaths and causes of deaths among the people, beset, as it has been, with many and very great difficulties, has already added to our knowledge, regarding the relative distribution of disease, general facts of no mean value. Testimony to a similar effect is borne by Dr. Townsend, Sanitary Commissioner of the Central Provinces. Speaking of the seasonal changes in the prevalence of fever, he says:* "If we turn to annual Table No. VIII, which shows the number of deaths registered from fever in each month of the year, we find that the period of the greatest prevalence of fever among the general population, as indicated by the rise and decline of the deaths registered from this cause, is much the same as among the police and prisoners in jail,"—bodies of men regarding whom precise data are available.

* Paragraph 134.

Section III.
Meteorology of the year.

37. The meteorology of 1870 was described at some length in the summaries which were furnished by the Meteorological Reporters of Bengal, the North-Western Provinces, and the Punjab, and also by the Sanitary Commissioner of the Central Provinces, and which were extracted in my Report for that year. The Reports of the Sanitary Commissioners do not add to these statements any new information; in some of them the important subject of atmospheric phenomena and their connection with prevailing disease has been altogether omitted. It will be sufficient here to re-state the main facts regarding the meteorology of the year, so that they may be considered in conjunction with the general history of disease which has been sketched. In the North-Western Provinces, the year is described as having been much less abnormal in its meteorological features than either of the two preceding years. In the hot season, the mean temperature was above the average. The rains commenced about the middle of June. They were abundant and distributed with considerable uniformity. In the Central Provinces, the temperature during the first four months of 1870 was much below what it had been during the same period of 1869. There were also more frequent and abundant falls of rain and greater humidity of the atmosphere. In May and the early part of June, although a similar difference in temperature continued, the mean humidity was less. The rains commenced in the third week of June, and were abundant. In the Punjab owing to the scanty fall during the first five months of the year, the total amount of rain in 1870 was below the average, but during the rainy season, from June to September, the fall was abundant, although not equal to what it had been in 1869.

Section IV.
The food supply of the people.

38. In regard to the food supply of the people, it may be said, generally, that 1870 presented a very pleasing contrast to the experience of the year previous, when prices ruled high, and when, in some parts of the country, there was a scarcity amounting in certain areas to famine. Dr. Planck remarks that in the North-Western Provinces, compared with 1869, 1870 was a year of plenty, but that prices still ruled high, compared with the average of previous years. A similar remark applies to the Punjab. There was a marked fall in the price of food in 1870, but rates had not returned to what they had been before the scarcity of 1869. In the beginning of the year scarcity is reported to have prevailed to a considerable extent in many districts, and to this cause Dr. Fairweather is inclined to attribute the comparatively high rate of mortality which characterized the early months. In the Central Provinces, where scarcity had pressed so heavily on the people in 1869, there was a marked improvement. But the Sanitary Commissioner observes that, although the food supply was better in 1870 than it had been in the year previous, it was still far from being cheap or plentiful. "The jungle produce which so materially assists in making up the food supply of the poorer classes, was

generally less plentiful than in the previous year. The mangoe trees in particular everywhere failed to blossom."

Section V.
Personal proceedings of the Sanitary Commissioners.

39. During 1870 the Sanitary Commissioner of the North-Western Provinces made two principal series of inspections, one embracing all the towns with more than 5,000 inhabitants in the Benares Division, and the other selected circles of population in the Saharanpur and Muzaffarnagar Districts. The different towns have been minutely described, their sanitary defects pointed out, and measures of improvement recommended. Much may be done, Dr. Planck believes, to add to the comfort and health of the people, but the great difficulty hitherto has been the want of money. The Officiating Sanitary Commissioner of the Punjab inspected and reported on a number of towns in various parts of the province. The Officiating Sanitary Commissioner of Oudh has furnished notes on the sanitary condition of Rai Bareli, Pertabgarh, and Sultanpur, which he visited in 1870, and similar notes are added regarding other places visited in 1871. Dr. Townsend's inspection tour extended over a large portion of the Central Provinces, and the section of his Report devoted to a description of the places visited and to recommendations for sanitary improvement shows the care with which they were examined and their wants considered. I shall not enter into any details under this head, for the various matters alluded to are rather for the consideration of the Local Governments and Administrations. Enough has been said to show that the Sanitary Commissioners were generally active in the important matter of personal inspection, and their labors in this direction, while increasing our knowledge of the circumstances under which the chief diseases of the country prevail, are also calculated greatly to assist sanitary reforms by impressing the district authorities with the importance of the subject, and also the people with whom they come into contact during their tours.

Section VI.
Sanitary progress.
North-Western Provinces.

40. It only remains to state what sanitary progress was made in each of the Provinces during 1870. In the North-Western Provinces, the most important sanitary improvement was the commencement of measures for the drainage of the Ganges and Jumna Doab. In 1870 these measures embraced only enquiries as to the best means which could be devised for this important purpose, but, as I have already mentioned, these enquiries have now been completed, and the result has been a scheme which has been approved, and orders have been issued to execute the required work. As regards the city of Saharanpur itself, special works have also been undertaken embracing the effectual surface drainage of the town, the thorough reclamation of the Pandhoee Nuddee, and the improvement of the bed of the Damoolah Nuddee as far as its junction with the Hindun river, a distance of eight miles. With reference to sanitary progress over the Province generally, Dr. Planck remarks:—

"364. In the cities and towns throughout the Province generally, the work of sanitary improvement is going forward with a very commendable vigour. Indeed, the continuous improvement in these, the principal centres of population, is quite a noteworthy fact. Almost every city or important town presents to the inquirer some principal work of sanitary improvement and many minor works of the same kind. I do not say they all equal in value the roadway making in the crowded part of Benares before described in this Report, or the Saharanpur drainage scheme just now mentioned; but all good works of sanitary improvement, nevertheless, having for their object either better ventilation, or more perfect cleanliness, or decreased moisture, and in as far as they fulfil permanently any of these conditions, may their advantages, from a sanitary point of view, be rightly gauged. I think it matter for regret that as yet no attempt has been made to furnish any city with an artificial water-supply, for I believe the time has arrived when a commencement of improvement in this direction should be made."

The Punjab.

41. The sixth section of the Report of the Sanitary Commissioner for the Punjab shows that the subject of sanitary improvement is engaging much attention throughout the Province. In the city of Amritsar, projects for drainage and water-supply, the urgent need of which had been impressed on the authorities by the great sickness and mortality of 1869, were still under consideration; financial reasons had hitherto prevented the actual commencement of the work. At Delhi, the question of a good water-supply had been the subject of much discussion. A scheme for drawing water from wells sunk in the bed of the river and for distributing it over the town had been devised, but no work had been commenced, pending a settlement of the question, whether an alternative scheme of deriving the supply from the Western Jumna Canal might not be adopted as a more economical measure. Projects for the drainage of Ferozpur and Jalandhar, for improving the water-supply of Kohat, the civil station of Lahor, Rawal Pindi, Marri, and Peshawar, had either been commenced or awaited further orders. Minor works for improving other towns are also noted.

Oudh.

42. The Officiating Sanitary Commissioner of Oudh has not devoted any special section of his Report to a statement of any sanitary progress which was effected during the year, but mention is made in regard to many places of improvements both in drainage and water-supply. In his orders on the Sanitary Commissioner's Report, the Chief Commissioner observes—"There is reason to hope, at any rate in municipalities, that the necessity of providing an uncontaminated supply of drinking water is gradually forcing itself on the people." Improvements in drainage are noted as having been effected at Fizabad, Bara Banki, and Oonao. A scheme for the drainage

of the city of Lucknow was delayed only by the unsatisfactory state of the finances of the municipality. Minor improvements had been carried out at other places.

Central Provinces.

43. In the Central Provinces, the urgent need for sanitary improvements and the undoubted benefits which may be confidently expected from such improvements have long been recognized by the Administration, but the means available for the purpose have unfortunately been scanty. In spite of difficulties, however, improvement has been effected of late years, especially in the large towns, and this improvement has extended both to drainage and conservancy. A deficient and impure water-supply is believed to be the evil for which a remedy is most urgently required, and in this matter the Sanitary Commissioner is of opinion that much good has already been effected. At Nagpur, the works for supplying the town have been actively in progress, and there is an early prospect of the people being provided with pure water. At Seoni, a scheme of water-supply was also in course of execution. At Jabalpur and Sagar, projects for the same important object were under discussion. Plans for improving the supply in the villages have engaged the special attention of the Administration, and the district officers have interested themselves in the movement. Returns have been furnished showing the nature of the water-supply in each village, the defects under which it labors either as regards quantity or quality, and information will in future be supplied annually, showing how far these defects have been remedied. "The urgent need of improvement," remarks Dr. Townsend,* "is generally acknowledged, but all officers are of opinion that improvement can only be gradual, and that it must be effected by the people themselves; but that by constantly keeping the subject in the minds of the people, stimulating the landlords to undertake improvements of the kind required, and assisting them with advances when necessary, the object aimed at will in time be gained."

Conclusion.

44. In concluding this brief Review of the Reports of the Sanitary Commissioners in this Presidency for 1870, I may remark that they afford ample evidence to show that important information is being collected regarding the history and distribution of disease, and that in every Province the question of sanitary improvement is assuming a practical importance both in the eyes of the authorities and of the people which it had not previously attained. Progress may be but slow; but, in estimating that progress, the difficulties which attend sanitary administration in all countries must not be forgotten, nor those other difficulties of no small magnitude which are peculiar to this country.

No fresh orders seem necessary beyond fixing the date by which Reports should be submitted.

45. In regard to the mode in which Sanitary Reports ought to be prepared, I have no further suggestions to add to those which were made in my last general Review, and attention to which was subsequently drawn in the orders of the Government. The divisions there recommended appear to include all matters of importance, and it seems sufficient that the Sanitary Commissioners should be careful to afford full and definite information in respect to all of them. The punctual submission of their Reports is a point which requires attention; but in respect to this it would be desirable to alter the date on which they are due from the 1st March, the time previously fixed, to some later day by which they may be submitted without fail.

---

* Paragraph 424.

APPENDIX B.

A REPORT

ON THE

BLADDER-WORMS FOUND IN BEEF AND PORK.

BY

T. R. LEWIS, M.B.,

ASSISTANT-SURGEON, H. M. BRITISH FORCES,

ON SPECIAL DUTY, ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

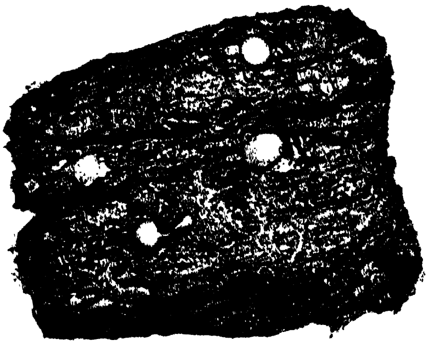


Fig. 1

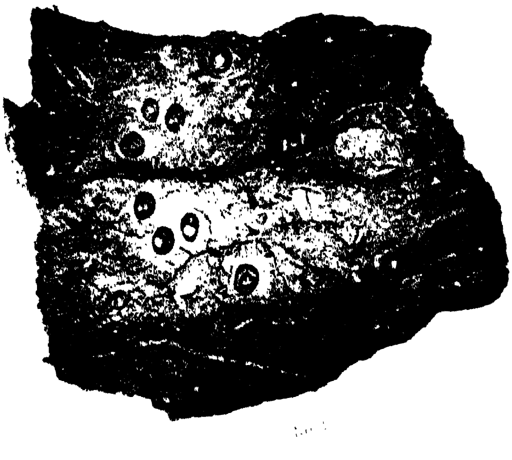


Fig. 2

APPENDIX B.

A REPORT

ON THE

BLADDER-WORMS FOUND IN BEEF AND PORK

BY

T. R. LEWIS, M.B.

The samples of the bladder-worms of beef were obtained chiefly from the Punjab,

and those of pork, from the Chinese slaughter-houses in Calcutta.

In reporting upon the microscopical characters of the "*cysts*" sometimes found in cattle slaughtered in various parts of India, notably in the Punjab, it has been considered expedient to take up the subject of cyst-affected pork at the same time, as the remarks which apply to the one kind apply in great measure to the other. I am indebted to Assistant-Surgeons W. H. Jameson and G. Andrew for numerous examples of ration beef thus affected from Rawul Pindee and Fort Attock. The samples of affected pork have been chiefly obtained from the Chinese slaughter-houses located in the north-western suburbs of Calcutta. It has been with the greatest difficulty that the latter could be obtained; personal applications to the various Chinese pork butchers were found to be quite useless. The proprietors seemed to be under the impression that my visit to their establishment had some connection with the recent slaughter-house reforms in the municipality. The service of a couple of low-caste men (*domes*) having been enlisted, fresh specimens were obtained from time to time. These men are said to consume a goodly portion of this pork, which is sold to them at a very cheap rate.

Cyst-affected beef, though rare in Calcutta,

is occasionally found in the markets.

I have, however, not been so fortunate in obtaining many fresh examples of cyst-affected beef. The native butchers declare that it is scarcely ever met with in Calcutta, and the Europeans in charge of the slaughter-houses state that it must be very rare indeed; one of them informed me that during the six months that he had superintended a slaughter-house, not a single example had come under his notice. I am not quite certain that the majority of the men thus in charge have any definite knowledge as to the appearance or nature of these "cysts." That they are occasionally met with in the beef supplied in Calcutta, there is no doubt, and perhaps more frequently than is imagined; but I confess that after trying in vain for months to obtain a sample, I felt greatly surprised at having after all to make their acquaintance, for the first time here, in a cold sirloin placed before me at breakfast, and off which I had dined on the previous evening without the slightest suspicion. The beef, it seems, had been obtained at the Dhurumtollah bazar in the usual way. Being anxious for a fresh supply for the purposes of experiment, a man was forthwith dispatched to the same butcher, but the answer was, "all sold"! As the specimen thus obtained presented a highly characteristic appearance, it was photographed (natural size). In this manner a more clear idea of the general aspect of cyst-affected meat, which had undergone the process of cooking, may be obtained than from any verbal descriptions or pencil drawings which I would be able to make.

The measles of beef and of pork present no marked difference to the naked eye.

The appearance of uncooked cyst-infected meat.

The term "measly" usually applied to beef and pork thus affected is probably derived from the speckled appearance of the meat (measle, a spot) when looked at along the course of the muscular fibres. Small grayish-white bladders are seen lying between these fibres, tapering at both ends, not unlike a grain of oats in form and size. When mature, they are usually a little larger than this, the measle of pork being generally somewhat larger than the measle of beef. Otherwise there is no appreciable difference to the naked eye. In photograph No. 1, a piece of fresh uncooked meat thus affected is shown, of the size of the original. It may be observed that the long diameter of the cyst corresponds with the course of the fibres

Names by which the parasites have been designated.

Former opinions as to their nature only partly true.

Their real nature no longer a matter of opinion.

The various stages through which they pass.

The mature worm alone is capable of producing ova,

which are very minute.

These bodies have been for a long time described under the names of "bladder-worms," "cysticercus cellulosæ," "telæ cellulosæ," &c.; but it is only since a comparatively recent period that their real nature has been satisfactorily explained. It was long suspected that they were somehow connected with tape-worm, the more general belief being that they were the young of these parasites, not capable of further development, which had found their way into places not adapted to their growth. It is now, however, definitely settled that these bladder-worms form a distinct and necessary stage in the life-history of tape-worms; each variety of the latter having a corresponding bladder-worm variety, which either develops into it, or remains undeveloped altogether. The genetic connection briefly stated is as follows:—The tape-worm is the sexually mature parasite. It attains this maturity in the intestinal canal of man and of animals. Here also the ova are fecundated, and more or less matured. Every segment of a tape-worm, having its sexual apparatus complete in itself, is capable of producing many thousands of ova, although the largest diameter of the segments of the mature worm found in the human subject, roughly speaking, does not exceed half inch. These eggs are necessarily therefore very minute; a heap of about five thousand of them would not exceed the size of a small shot. A good idea of their microscopic appearance may be obtained by reference to the accompanying micro-photograph (No. 3), which shows three of the ova in the midst of some of the calcareous corpuscles found in the tissue of tape-worms.*

Distribution of the ova, escape of the contained embryos, and passage of the latter through the intestinal walls,

These ova are distributed in various ways; some find their way into the intestines of the animals adapted to their development; here the ova become ruptured, and the embryo which each contains escapes into the intestinal canal. Now the embryo is provided with six very minute hooks (not always observable through the "shell" of the egg, and not visible in the particular samples photographed, possibly the samples were young), two in front and two on either side, by which means they are enabled to bore or burrow their way through the intestinal walls, and pass on into

---

Microscopic-photography.

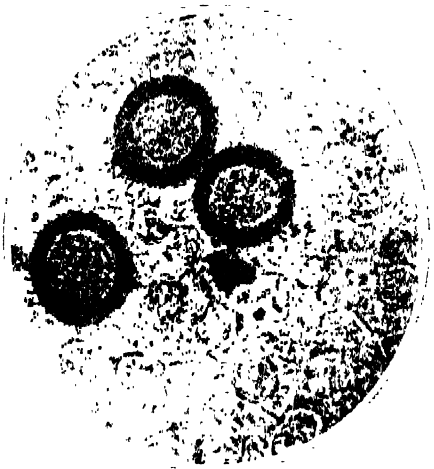
* In connection with the accompanying attempts at the representation of minute structure by microscopic-photography (it is believed for the first time in India), I desire to acknowledge the great assistance which has been received from Assistant-Surgeon G. E. Dobson, M. B., without whose aid, indeed, it would have been impossible for me to have carried out the experiments in this direction.

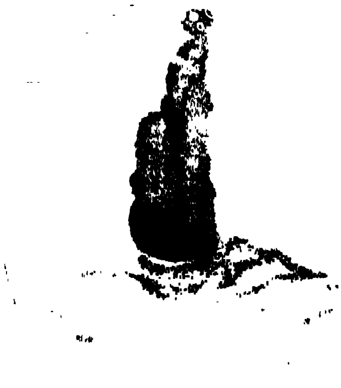
The heliotype-process.

It is hoped that more successful representations of microscopic objects will in time be obtained than those now presented; this method of illustrating microscopic objects having of late become of great importance, as by the new heliotype-process, *permanent* reproductions are obtainable in every way equal to the originals, and at less expense than engraving.

This process is, I understand, being at present perfected and adapted for India by Captain Waterhouse, Assistant Surveyor General.

(Since the submission of this Report, it has however been found that the arrangements are not yet sufficiently matured to ensure the supply of a sufficient number of copies within a given time; they have therefore been very carefully lithographed at the Office of the Surveyor General under the superintendence of Captain Waterhouse.)





the various tissues of the animal, somewhat after the manner of a mole, the anterior pair of hooks acting the part of the snout and the lateral pairs that of the fore-legs;* the particular tissue selected depending on the particular species of parasite. Those affecting cattle and pigs lodge themselves between the fibres of muscular tissue, while those of rabbits generally select the peritoneal membrane, and those of sheep are found on the surface of the brain, giving rise, in them, to the disease called "staggers."

until they reach the muscular and other tissues suitable to their development,

The embryo having thus lodged itself, enters on the second stage of its existence, the encysted stage, which, in the case of the species found in cattle and swine, constitutes what is termed "measles."

in which they become encysted.

This has been over and over again proved by experiment: ova-containing segments of the Tænia affecting the human subject have been administered to young pigs and to *calves*† in some suitable fluid, such as milk and gruel, and when the animals were slaughtered, after a period of from two to three months, the flesh of the greater number has been found thoroughly measled, while evidence of the commencement of this condition may be detected in a fortnight or three weeks.

Young animals only are capable of being infected.

As before stated, the bladder-worm in beef and pork presents the same appearance to the naked eye. On separation of the muscular fibres in which the parasite has lodged itself, a tough little fibrous bag may be pinched up with the forceps. This constitutes the "cyst" which has been formed around the worm, and is probably derived from the fibrous tissue or sarcolemma of the muscle with which it is microscopically identical. This little sac is firmly attached to the flesh, and cannot be removed except by tearing it away from the latter. On carefully snipping off one of the ends of this fibrous bag and gently pressing it with the point of the finger, another little bladder of a much more delicate appearance, with a shining surface, may be squeezed out. This is the bladder-worm itself. If the photograph of the transverse section of the roasted piece of measled beef (No. 2) be now examined carefully, a group of four cysts will be seen cut through the centre. The upper slice held up by pins represents their appearance when empty—a semi-circular cavity between the muscular fibres formed of the fibrous tissue alluded to, whilst the corresponding halves are seen below, each containing its little bladder-worm, here shrivelled and dead, and not unlike a grain of sago in size and form (hence the name "sago" applied to this condition in some of the slaughter-houses), but in its natural condition filling the fibrous bag which enclosed it, for the shrivelled vesicle is distended with fluid during life. As long as this sac remains entire, the amount of fluid contained in it may be made to vary, by simply immersing the parasite in fluids of various densities in accordance with the well known laws of diosmotic action. This is doubtless the way by which nourishment is conveyed; the plasma of the blood circulating through the muscle exudes into the cavity of the fibrous bag (on the outer surface of which numerous minute vessels may be seen to anastomose), and between the fluid contents of this bag and the fluid contents of the bladder immersed in it constant interchanges must take place, for the bladder-worm itself has no vascular connections.

Minute structure of the outer coverings of the parasite.

Appearance of cyst-affected meat after cooking.

Nourishment how acquired.

If this delicate vesicle be closely observed, a hard whitish tubercle will be seen through the walls, about half the size of a grain of rice, which, on gently pressing the cyst between two pieces of glass and examining under a low power, will be found to consist of a solid substance, curled upon itself (generally) as shown in micro-photograph No. 4, which represents a sample

The vesicle enveloping the inverted and coiled 'head' and 'neck.'

---

* P.—J. Van Beneden "*Mémoire sur les vers intestinaux.*"

† It is a remarkable circumstance that, as far as is hitherto known, pigs over a year old and grown up cattle cannot be infected; with young pigs and calves only have infection experiments proved successful.

of the beef bladder-worm magnified five diameters. The bladder is unruptured, and the curled object seen through the walls is the "head and neck" of the parasite.

Mode of everting the 'head' and 'neck.'

If the cyst be now transferred to the stage of a dissecting microscope and very gently pressed with suitable needles, the in-curved portion may, after a little practice, be made to turn out of its sac without in the least degree tearing it, although the sac is considerably more delicate than tissue paper, as a small orifice may be perceived with the aid of a lens, which orifice corresponds to the slight concavity of the vesicle observable in the micro-photograph, and through this the "head and neck" may be pressed out. The first stage of this operation is represented in a micro-photograph (No. 5) of a small beef-cyst magnified five diameters, and the completely everted condition in micro-photographs Nos. 6 and 7; the former being a very satisfactory representation of the pork bladder-worm and the latter of the bladder-worm of beef, both magnified to the same extent. It is now that the distinction between the two parasites becomes evident. This distinction will be referred to farther on.

The anatomical arrangement and minute structure of the 'head' and 'neck.'

Microscopists differ very much as to the mode of growth and anatomical arrangement of the "head and neck" in the encysted condition. I venture to give the following description as briefly as possible of these structures, based on at least a hundred dissections of the cysts in various stages of development.

Dissections.

The vesicle.

The bladder-worm having been placed in a shallow trough provided with a cork bottom, a little water is added so as to cover the object, and the whole placed on the stage of a dissecting microscope. The bladder is slit open with fine scissors at the part opposite to the orifice already referred to; the membrane reflected from the contents on all sides, and held down in this condition by means of fine pins inserted into the underlying layer of cork (Fig. 1.) The inner surface of the membrane when thus spread out has been well described by Mr. Rainey, in the Philosophical Transactions, as presenting the appearance of being sprinkled over with powdered glass. The parasite, however, is not yet at liberty, but remains firmly rolled up, and if a needle be gently drawn over the mass, it will be found that a perfectly even surface is presented, and a hair passed into the original orifice in the bladder on the opposite side (as here placed) will be found to press a layer of tissue before it; in fact, the part touched by the needle and pushed forward by the hair consists of an exceedingly delicate membrane (the 'receptaculum') enveloping the coiled up 'neck'. This, again, may be laid open with a sharp dissecting knife, carefully reflected and held down by the smallest pins obtainable. (Fig. 2.) The membrane in contact with the part marked with an asterisk cannot be reflected, but remains firmly attached to the coiled heap. The reason for this will soon become evident.

The 'receptaculum.'

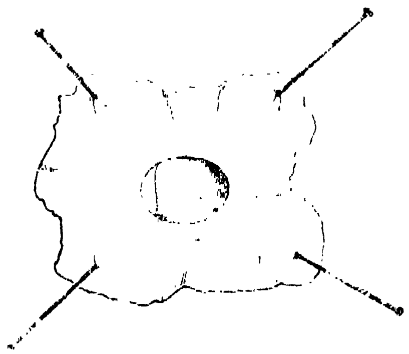


Fig 1. The ruptured bladder spread out on a layer of cork by means of pins, with the coiled up parasite adherent to its inner wall. Magnified about 5 times.

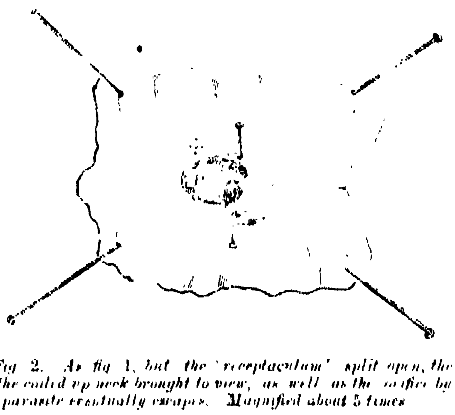


Fig 2. As fig 1, but the 'receptaculum' split open, the of the coiled up neck brought to view, as well as the orifice by the parasite eventually escapes. Magnified about 5 times

The portion of the neck nearest the orifice is moveable, and may be readily drawn on one side by means of a little hook (Fig. 3) when the cavity in which the worm has lodged will be brought well into view. By fixing a short hair into a small needle-holder, and using it as a probe, it will be ascertained that the delicate inner membrane just reflected is continuous with the neck of the worm at the end furthest from the orifice, just as the mucous membrane of the mouth is continuous with the skin of the lip, or that the finger of a glove is continuous with the hand-portion when the latter is pulled over the former, so that the reason why, at the corresponding end on the opposite side, the membrane could not be reflected becomes evident at once.

The neck continuous with the 'receptaculum.'

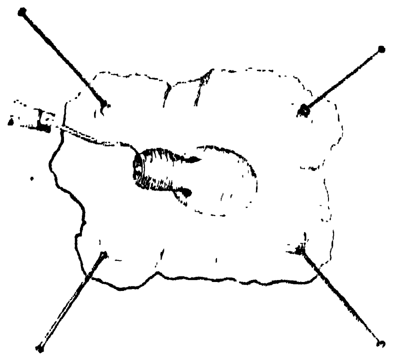


Fig 3. The 'head' and 'neck' pulled out of the 'receptaculum' through the rent. Magnified about 5 times.

This arrangement becomes still more clear when the 'head' and 'neck' are turned out and made to assume their destined appearance. This may be done by slight pressure and gentle use of the hook as shown in the third wood-cut. The 'neck' will then be turned inside out, and become uncoiled at the same time, as seen in Fig. 4, which represents the greater part of the neck thus exposed; the head portion, however, is seen to be still unfolded. Unless the parasite be alive, its further unfolding is attended with considerable difficulty, and can seldom be satisfactorily accomplished, especially if it has been preserved in glycerne. Under other circumstances, the head is readily squeezed out. If a hair be now inserted through the orifice in the outer cyst, and tied round the neck of the completely unfolded worm, this portion may be pulled out, as represented in Fig. 5, and more completely so in Fig. 6.

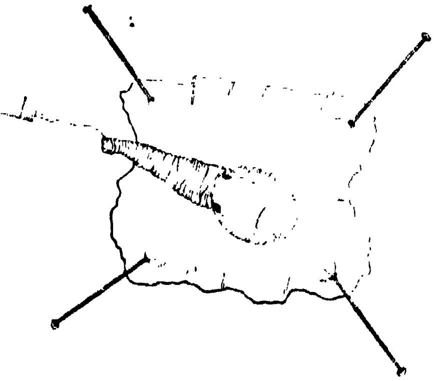


Fig. 4. As fig. 3, with the 'neck' everted and uncoiled. The head is still inverted. Magnified about 5 times.

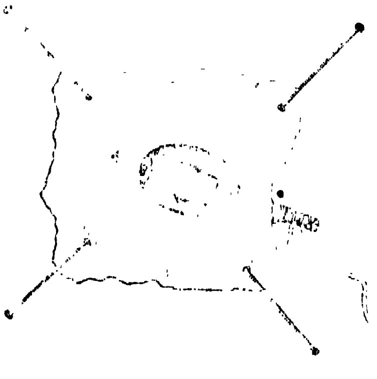


Fig. 5. The 'head' having been everted, a hair was introduced through the orifice fastened to the 'neck' and the parasite withdrawn from the 'receptaculum.' The latter is seen to be continuous with the 'neck' itself. Magnified about 5 times.

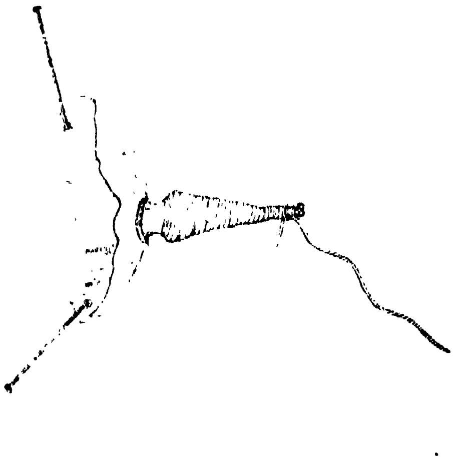


Fig. 6. As fig. 5. The worm completely withdrawn from its enveloping vesicle. Magnified about 5 times.

The part of the worm marked with an asterisk in the fifth wood-cut is not hollow, as one might suppose from observing that the neck and the hood surrounding it are continuous, for a little membranous tissue stretches across it, differing in structure (more especially by the entire absence of the calcareous corpuscle to be hereafter referred to) from the neck and its reflected continuation; the little sac acting as a sort of diaphragm, so that air or a colored solution blown into the outer bladder does not extend up the neck of the worm. This, to the best of my knowledge, is a correct anatomical description of the encysted parasite, the somewhat complex details of which will, perhaps, be made clearer by the accompanying semi-diagrammatic sketch. (Fig. No. 7).

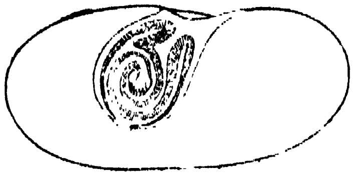


Fig. 7. Diagrammatic, showing the inverted and coiled condition of the 'head' and 'neck,' with the relation of the latter to the receptaculum.

The only appreciable difference between the two cysts is found in the 'head.'

That of beef presenting five suckers but no hooks,

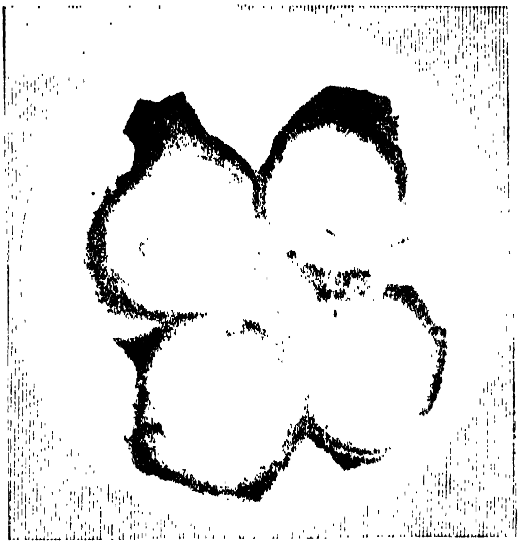
whilst the pork cyst presents four suckers and is armed with a circle of hooks.

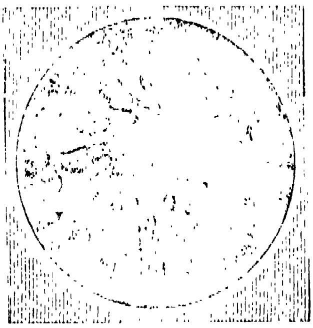
The arrangement and number of the hooks.

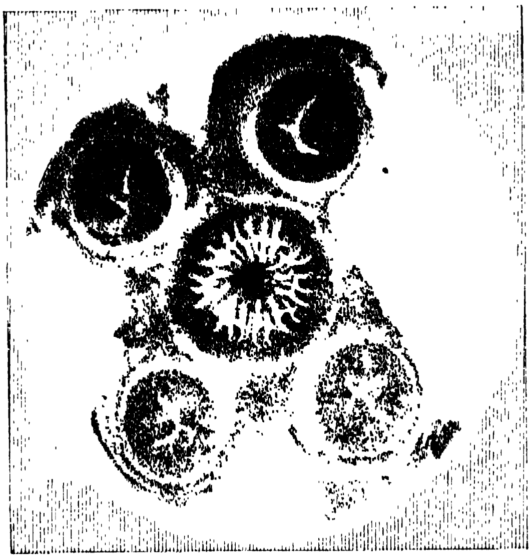
The only marked difference between the measle of pork and the measle of beef and veal (for calves are found to be much more frequently infected than grown-up cattle) is found in the so-called "head." The two kinds are provided with small circular disks or suckers. These are well shown in the micro-photograph (No. 8), representing the "head" of a beef cysticercus, magnified 35 diameters. Suckers have been mistaken at various times for eyes, for nostrils, and for mouths, with none of which organs are the parasites provided. In live specimens the suckers are frequently seen to protrude and retract. They are used by the worms for attaching themselves to the intestinal walls, when they get transferred thither. A fifth sucker may nearly always be detected in this species, although the statement has often been called into question, but this fact is indisputably proved by its presence in the print of micro-photograph No. 9, in which the head of a beef cysticercus, magnified 35 diameters, has been snipped off with a scissors and carefully dissected, under water, on the stage of the microscope, so as to show the *five* suckers when spread out between a covering glass and slide. In the spot corresponding to this central rudimentary sucker or surrounding it, a series of sharp pointed hooks is developed in the pork variety, which constitute the essential difference between these two species of bladder-worms. The relation of the hooks to the four suckers is well shown in the micro-photograph (No. 10) of the head of a pork bladder-worm, dissected and spread out as in the other species. The hooks are arranged in two rows, the inner row being the larger, twelve or thirteen, sometimes more, in each row; the points of both rows being directed forwards and outwards so that this species is thus enabled to take still firmer hold of its 'host' than those found in beef and veal. Micro-photograph No. 11 represents the ring of hooks in the dissected preparation more highly magnified than in No. 10; a one-inch objective being used in the latter case and a quarter in the former.

The calcareous corpuscles

Excepting that the pork worm is provided with the hooks just described, and that the beef worm presents a fifth or central sucker, there is no difference in the microscopic appearance of the two varieties. In both, the 'head' and 'neck,' together with the reflected portion of the latter, are thickly scattered with oval calcareous particles, some of which present a laminated appearance very like a section of 'alternating calculi.' These are acted on by acids, but even strong alkalies scarcely affect them, and I have failed to detect







No 10

[illegible]

have been mistaken for ova, &c.

any great difference in their appearance after subjecting them to the flame of a blow-pipe. They have been mistaken for eggs, but they are very different in appearance from ova, as may be seen by comparing micro-photograph No. 12, representing these particles from a beef measle, magnified by a $\frac{1}{8}$ objective, with No. 3, in which three eggs from a mature tape-worm are represented as well as the calcareous corpuscles (which lie on a lower plane and consequently somewhat out of focus).

Cysticerci incapable of further development unless transferred to the intestinal canal.

In the cysticercus stage these parasites contain no ova, are sexually immature, and incapable either of further development or of reproducing others of their like, until they find their way into the intestinal canal of the animal which devours the flesh in which they are encysted.

Infection experiments on dogs were unsuccessful.

The bladder-worm of pork may produce *tænia solium* in man, and

that of beef and veal may produce the *tænia mediocanellata*.

With the view of ascertaining whether the particular bladder-worms under consideration would develop in other than the human intestines, I have repeatedly administered flesh containing numerous cysts to animals; nine dogs (three being puppies) have been thus experimented upon, their excreta examined daily until slaughtered at periods varying from a fortnight to three months, but in no case could I satisfy myself that these cysts had left a trace. They were all evidently digested, together with the meat which contained them. Tape-worms there certainly were, but of a very different kind to those found in the human subject, so that the dissemination of the human tape-worm by dogs eating the carcases of pigs and cattle is not probable. With man, however, the case is different, for it has been conclusively proved that, when *raw* measly pork is eaten, tape-worm (*tænia solium*) may be produced. Professor Leuckart, of Giessen, the chief authority on this subject, has actually produced this tape-worm in a prisoner who had been placed at his disposal for the purpose. The evidence is very nearly as conclusive in connection with the beef and veal measle, for Assistant Surgeon Oliver, R. A., has succeeded in producing (in the Punjab), the tænia mediocanellata in two low-caste natives, from whom no previous history of the existence of tape-worm could be obtained; moreover, the identity of appearance of the head of the mature hookless tape-worm (*tænia mediocanellata*) with the head of the encysted worm in beef, the fact of tape-worm being endemic among the Abyssinians who do not eat pork, but only the flesh of cattle, and that in the raw state, as well as the fact that the ova procured from the tænia mediocanellata in man have repeatedly produced measles in calves, leave no reasonable doubt on the subject.

Precautionary measures.

The bladder-worm degenerates and becomes inert in the tissues of the animal in the course of from 9 to 10 months.

In considering the most practicable methods of reducing the risk of mischief arising from the consumption of meat in localities where measled animals are numerous, it is of importance to bear in mind the ages at which the animals are slaughtered in these districts. As already stated, pigs under a year old cannot be infected, nor can grown-up cattle, and in connection with the latter class of animals, Cobbold has made the most important practical observation that, when a calf is infected, and slaughtered some 9 or 10 months subsequently, the cysts will be found to have become degenerated in all parts of the body; gritty calcareous spots (*perfectly harmless*) alone remaining to mark the situation formerly occupied by the living parasite. Such being the case, the probability of the flesh of cattle being infected with cysticerci diminishes in proportion as the animal is over two years of age. It is believed that a somewhat similar rule may be applied to pigs, although no definite experiments have, as far as I have been able to ascertain, been recorded. In

The presence of measles almost restricted to young animals.

Calcutta it is the young growing pig which is liable to be infected in this manner, and many of the Chinese butchers are aware of this fact, so that the slaughtering of a pig suspected of harbouring measles is delayed for some months, even though the animal be fat and in every other way eligible for the market.

Diagnosis during the life of the animal very uncertain.

If diagnosed during life, the slaughtering of the animal should be deferred.

The diagnosis of this condition in pigs and cattle before death is by no means easy, unless the number of parasites be very great; although in some of the seaports of Northern Europe, trained men have been appointed, who have acquired considerable precision in detecting the disease in pigs intended for exportation. The general condition of the animal may be bad or excellent; symptoms of local irritation may exist or they may not, so that no precise method of diagnosis can be given. If, however, the cysts be extensively distributed throughout the tissues of the animal, their existence may very generally be detected by passing the finger along the eyelids or inserting it into the mouth, and feeling more especially the mucous membrane at the root of the tongue, beneath which the little cysts may often be felt as nodules about the size of peas. If felt, the slaughtering of the animal should be deferred for six or twelve months, or until these nodules disappear. The method of detecting the presence of *trichinæ** in the flesh of the pig and in human flesh infected thereby, namely, cutting out a fragment of muscle with a sort of harpoon, is not applicable to the detection of cysticerci, for in probably 9 cases out of 10 the piece of muscle thus scooped out would contain no trace of the parasite.

Proper cooking the only reliable preventive.

The only reliable preventive measure at our disposal is proper cooking of all meat; by this I mean exposing every particle of the meat to an amount of heat sufficient to destroy the vitality of each cysticercus.

Means adopted for ascertaining whether the parasites were alive or not.

With the view of ascertaining definitely what exact amount of heat is required to do this, I have made numerous experiments with cyst-infected meat in all stages of growth, a brief resumé of which is here given. When a living cysticercus is removed from its host and placed on the stage of the microscope and watched for some time, its muscular tissue is seen to contract and expand, and it is even able to shift its position on the slide. Frequently, however, no such indications of life are manifested unless the slide be slightly warmed or irritants applied to the substance of the cyst, whilst others on the other hand, although in no way differing in appearance from those just mentioned, cannot be made to manifest the slightest indications of life, being in reality dead. It was therefore soon found whilst experimenting on the effects of temperature, that actual destruction of the substance of the cysticercus or even perceptible alteration in its appearance was not necessary to bring about its death, whereas the non-manifestation of movements did not prove that life was extinct.

Electric currents transmitted through them whilst under the microscope.

In order, therefore, to decide this point satisfactorily, it was considered that electricity might be advantageously resorted to, in addition to ordinary irritants, seeing that as long as muscular tissue preserves its vitality, a current passed through it will cause it to contract. The wires from a battery were

---

The bladder-worm not to be confounded with the *trichina spiralis.*

It is by no means uncommon to find that the prevalence of measled meat in a locality has been attributed to the existence of the *trichina spiralis* which gives rise to what is called the *trichiniasis* or the "flesh-worm disease" so prevalent in Germany a few years ago, and undue alarm has arisen from the misconception. This worm belongs to a totally different order, its mode of growth and multiplication is different, and the result of infection on the human body vastly more serious.

consequently attached to the stage of the microscope and "induced currents" transmitted through the substance of the bladder-worm under observation.*

Temperature to which the centre of pieces of meat are subjected to during ordinary cooking.

The first step taken was to ascertain the temperatures to which meat is exposed in the ordinary methods of cooking. Pieces of ordinary meat weighing from four ounces to several pounds were selected, and immediately on removal from the source of heat the bulb of a thermometer was introduced into its substance at various stages during the process of cooking.

The temperature of portions of beef removed from a boiler of beef-tea in which they had been immersed and kept at 212° for over an hour varied from 190° to 200° Fht.

The temperature of legs of mutton which had been put into the boiler almost as soon as the water was put into it, averaged 140° in the interior at the moment the water had reached the boiling point (212°F.), and after boiling for five minutes the temperature had reached 170°. Chops and steaks, before being considered well done, are exposed to a temperature of from 170° to 180°; at 150° they are considerably underdone, the red coloring matter has not disappeared, nor does it disappear until the meat has been subjected to about 10° more heat.

No meat can be said to be "done" unless exposed to at least 150 F.

In no instance did I observe that the cook had served meat the temperature of which, when tested with the thermometer, did not exceed 150°F. At a lower temperature than this the meat appeared raw, and would in all probability have been returned to him.

The amount of heat required to destroy life in cysticerci.

The next point to be ascertained was the amount of heat these entozoa would resist when placed in pure water, in salt and water, or without the addition of water. After satisfying myself that the samples under observation were alive, a dozen or two were picked out of the affected meat, leaving a little of the latter attached, so as not in any way to increase the 'tendency to death' which laceration of the capsules might do, and yet not permitting too much of the meat attached, so as materially to modify the amount of temperature to which they were exposed. They were then subjected to a temperature varying from blood-heat upwards, and kept so for definite durations noted at the time. As the data thus accumulated would tend rather to confuse than to elucidate were they given in detail, the following general deductions may be considered sufficient:

(1).—That exposure to a temperature of 120°F. for 5 minutes will not destroy life in cysticerci, but that they may continue to manifest indications of life for at least two or three days after such exposure;

(2).—That exposure to a temperature of 125° for 5 minutes does not kill them; but

(3).—After being subjected to a temperature of 130°F. for 5 minutes, they may be considered to have perished. After exposure to this and higher temperatures, in no instance have I been able to satisfy myself that the slightest movements took place in their substance when examined under even a high power. At least it may be confidently asserted that, after exposure for 5 minutes to a temperature of from 135° to 140°, life, in these parasites, may be considered as absolutely extinct.

Life in them may be considered extinct after exposure to a temperature of 135° to 140° F.

---

* Should these or like experiments be repeated by others, it may be well to draw attention to the fact that, if the conducting wires are accidentally permitted to touch the brass work of the microscope, an extremely painful shock may be received by the eye of the observer, which might, as occurred to myself, necessitate a cessation from microscopic work for some days.

(4).—The presence of salt to the extent used in cooking did not materially modify the result; nor

(5).—Did the fact of their having been introduced into a hot chamber without being immersed in fluid, except that in the latter case the time of exposure required was longer.

In no case was I able to detect a single live bladder-worm in portions of measly meat which had been cooked in the usual way, and even in portions of it which had been rather under than over-cooked.

Inference.

It may, therefore, be inferred that even with ordinary precautions on the part of the cook, the further development of cysticerci will be arrested; it is rarely that persons from preference partake of meat so much underdone as not to have been subjected in *every part* for 5 minutes to a temperature of from 135° to 140°F., after which exposure it may be confidently stated the entozoa will have succumbed.

APPENDIX C.

MICROSCOPICAL AND PHYSIOLOGICAL RESEARCHES

INTO THE

NATURE OF THE AGENT OR AGENTS PRODUCING

CHOLERA.

BY

T. R. LEWIS, M. B., AND D. D. CUNNINGHAM, M. B.
ASSISTANT-SURGEON, H. M. BRITISH MEDICAL SERVICE. ASSISTANT-SURGEON, H. M. INDIAN MEDICAL SERVICE.
ON SPECIAL DUTY, ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

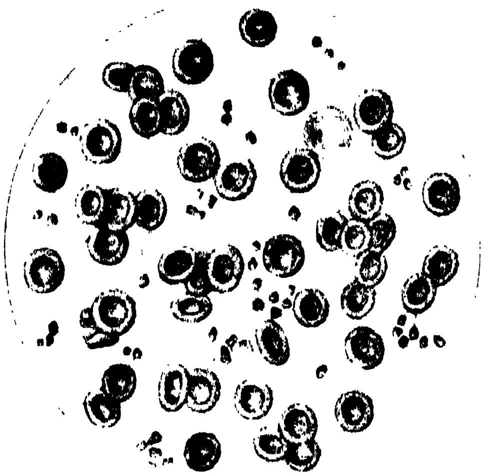


Fig. 1. × 700

Blood corpuscles after exposure to Osmic-acid fumes; one white cell [illegible] with [illegible] fibrinous threads, [illegible] protoplasmic particles.

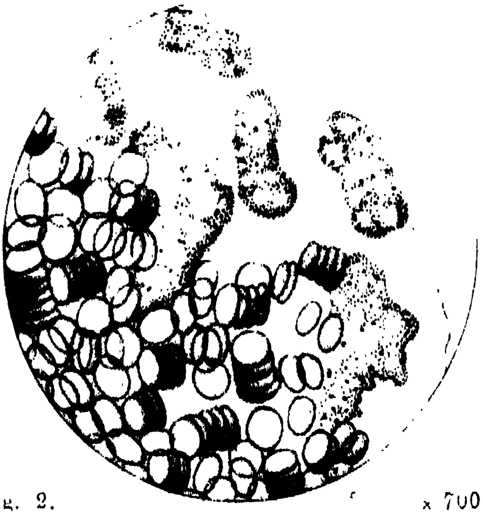


Fig. 2. × 700

[illegible] bodies drawn [illegible] out of the clot.

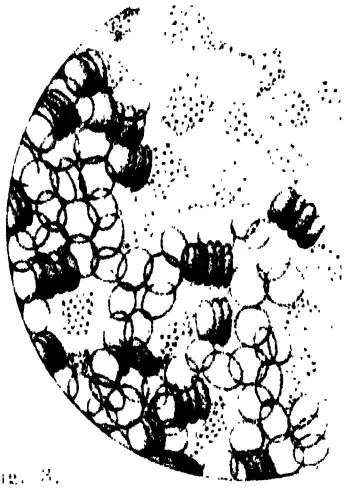


Fig. 3.

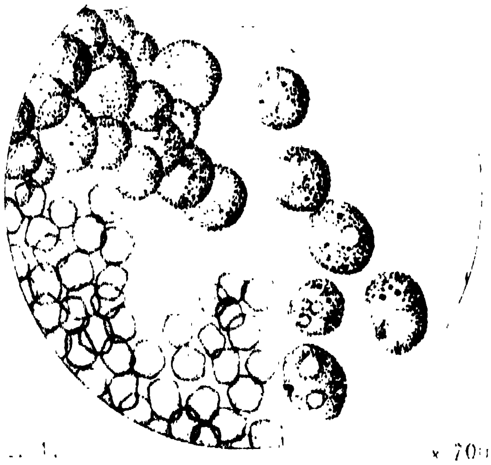


Fig. 4. × 700

[illegible] increased in size and [illegible] are more or less distinctly [illegible]

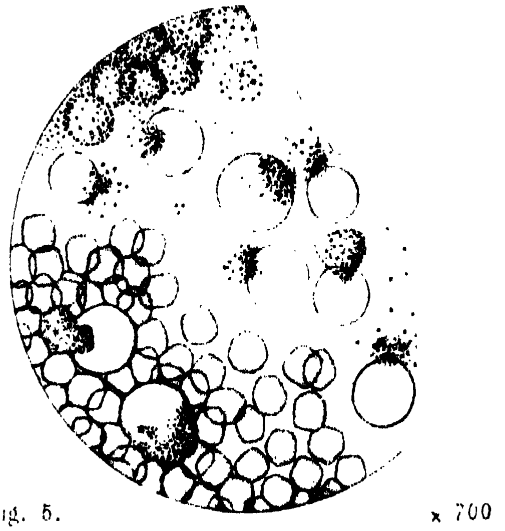


Fig. 5. × 700

Escape of the contents of the motionless corpuscles, with the appearance of hyaline capsules, and the formation of spherical aggregations of granules.

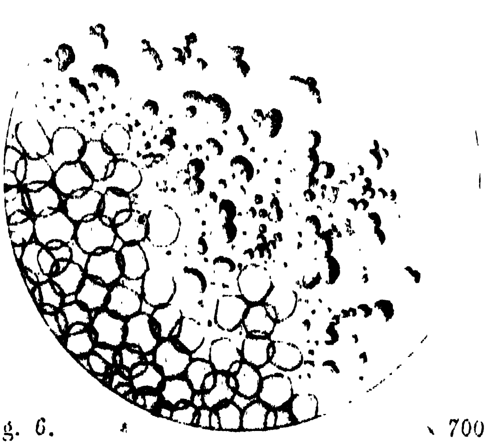


Fig. 6. × 700

Appearances resulting from the disintegration of the protoplasmic bodies.

CHANGES OCCURRING IN PREPARATIONS OF THE BLOOD IN CHOLERA.

APPENDIX C.

MICROSCOPICAL AND PHYSIOLOGICAL RESEARCHES

INTO THE

NATURE OF THE AGENT OR AGENTS PRODUCING CHOLERA.

BY

T. R. LEWIS, M.B., AND D. D. CUNNINGHAM, M.B.

INTRODUCTION.

In the Instructions issued by the Army Sanitary Commission for the conduct of this enquiry, particular stress is laid on the importance of accepting no statement bearing on the question of the mode of origin and diffusion of cholera as proven, no matter how distinguished the authority on which it may have been made, until an opportunity occurred for verifying it for ourselves. It has been our endeavour to adhere strictly to this injunction, and we have therefore gone over ground on which, under other circumstances, might have been considered unnecessary for us to enter. This, however, we do not by any means regret, as the experience gained by such a training has more than compensated for the time and labour expended on it. It has obliged us to be more on our guard than we might otherwise have been, especially in connection with observations that have been authoritatively put forth regarding some low forms of life, and of the interpretations which have been made concerning the effects of various experiments on lower animals.

We do not for a moment expect, nor do we wish that our own observations should be accepted in a different spirit; on the contrary, we shouldbe glad to see them practically tested by those who have the opportunity of doing so. The observations here recorded are submitted as facts; in no instance has an observation been included which had not been witnessed by both of us; any observation one may have made, which had not been verified by the other, has been allowed to stand over. The interpretation which we have ventured to put on some of these observations may of course be erroneous, but the facts have, to the best of our ability, been accurately recorded, so that no one need be led astray by any faulty inferences of ours.

We have, as far as possible, carefully avoided the introduction into the text of any descriptive terms involving the acceptance of a theory, although it would have been in some cases very convenient to have adopted some of the ingeniously coined words lately admitted into our medical vocabularies. To the authors of some of the terms which we have employed we are particularly indebted, and we wish specially to acknowledge the aid we have received from a study of the writings of Professors Beale, BurdonSanderson and Bastian

Our report has been divided into three parts; the first containing a description of the microscopical appearances of the blood in cholera; the second giving an account of a series of experiments on the action of solutions of organic matter from various sources and in various stages of decomposition on living animals; and the third, on the effect of section of certain nerves.

PART I.

MICROSCOPIC EXAMINATIONS OF THE HUMAN BLOOD.

A.—Results of microscopic examinations of the blood in cholera, together with a description of the methods adopted.

The importance of making *continuous* examinations of the blood.

Although results of careful examinations of the chemical characters of the blood in cholera have been frequently made, investigation of the microscopic characters presented by it, and more especially of the changes and developments occurring in it when removed from the body, has been comparatively neglected. As the subject is one of very great importance, and is daily becoming more so on account of the ideas now prevalent regarding the disease, it has been carefully investigated, and the general results, attained from numerous series of experiments, are briefly stated below. Any system of examination not allowing of prolonged and continuous study of individual specimens of blood, as well as of exact observation of their characters when first removed from the body, is necessarily unfitted to furnish trustworthy information, and before entering on the subject, it became necessary to devise means suited to the attainment of both these ends.

Methods adopted for the immediate examinations of blood.

The requirements of the case appeared to be sufficiently met in the following way. For purposes of immediate examination, specimens of blood were placed under thin covering-glasses, individual specimens being prepared without any re-agent, mounted in acetate of potash after exposure to the vapour of a two per cent. solution of osmic acid, or mounted in acetate of potash or acetate of soda without previous exposure to the osmic fumes.

The advantages of employing wax-cells for continuous examinations.

For continuous observations on the changes taking place in the blood after its removal from the body, wax-cells were employed. A small drop of blood having been received on the centre of a carefully cleaned covering-glass, the latter was pressed down on the wax-cell and hermetically sealed. The cell was deep enough to prevent the blood coming in contact with the slide, and therefore allowed of its free exposure to the included air.

The air contained in such cells sufficient for developmental purposes.

This form of wax-cell is a modification of that employed by Stricker in similar investigations on the blood, and is identical with that described by Berkeley as specially adapted for observations on the development of fungi. The great advantage of the method is, that, when once the specimens have been carefully sealed, large numbers of cells may be retained in perfect condition for examination without calling for the employment of the moist chamber and its inherent fallacies, arising from the constant possibility of the introduction of extraneous elements into the material under observation. The effect of any such cells in facilitating observation, may be judged of by the fact that by their means specimens of blood have been kept in a condition for continuous observation for nearly three months at a time. That sufficient air is included in them to allow of developments taking place in the isolated droplet of blood may be demonstrated by the results of certain observations to be hereafter referred to.

The samples of blood where and how obtained.

The specimens of blood during life were generally derived from the point of one of the fingers of the patient (which had been carefully washed with spirit or clean water and thoroughly dried) by pricking it with a needle. Those after death were usually obtained from one of the chambers of the heart.

Having briefly explained the methods which have been adopted in carrying out these observations, we now proceed to a description of the results obtained under these conditions.

1.—*Appearances presented by the blood when treated with osmic acid and acetate of potash.*

Osmic acid preparations of cholera blood.

The absence of bacteria in cholera-blood obtained during life, but

The red corpuscles appeared unaltered in most cases; in one or two they conveyed an undefined impression of softness. Few leucocytes were present as a rule, but in one specimen they were present in some numbers along with other cells of considerably larger size and extremely delicate in outline and structure. Not the faintest trace of bacteria was detected in any instance, although they were carefully searched for under powers ranging from the $\frac{1}{4}$ to the $\frac{1}{12}$ *à immersion*.*

numerous particles of bioplasm are present.

There were, however, as a rule, numerous specimens of minute irregularly rounded bodies giving a refraction like that of the leucocytes, and varying considerably both in size and form. They occurred sometimes in little patches or heaps, and in other cases were irregularly scattered over the field. No structure could be detected in them, and they appeared to be mere fragments of bioplasm (Fig. 1).

All these bodies, red cells, leucocytes and minute bioplasts were spread out in a medium precisely similar to that observed in normal blood when prepared with osmic acid, almost homogeneous, in some places very finely molecular, and marked by faint delicate curved lines.

Preparations of blood obtained after death and treated in the same way presented precisely the same features. The only characteristic distinguishing them from the most healthy blood was the presence of numerous bioplastic fragments described above, and even this did not appear to be constant. Any discussion of the probable nature of these bodies will be better deferred until a description of the changes occurring in the blood have been described.

Appearance of the blood with and without the addition of re-agents.

Specimens of blood to which no re-agent had been added, and others treated with acetate of potash or acetate of soda, only differed from those treated with osmic acid in showing the minute bioplastic bodies less constantly and distinctly.

2.—*Appearances presented by specimens of blood in wax-cells.*

Description of the blood in wax-cells when perfectly recent,

And the changes which gradually take place on it.

When examined immediately after preparation, these, as a rule, presented nothing noteworthy or in any way characteristic. In one or two instances the serum was stained with the colouring matter of the red corpuscles, but in general it was perfectly clear, free of staining and molecules or particles. The serum at first appeared as a very narrow ring around the corpuscles, but, as a rule, this rapidly widened as the mass of the latter contracted, and ultimately it formed a wide clear area of fluid around the clot. The number of white corpuscles at first visible was small and not noteworthy, but with the formation of the ring of clear serum a series of most remarkable phenomena gradually presented itself. Normal sized white corpuscles began to migrate into the fluid, but in addition to these, and in far greater numbers and activity, were much larger and more delicate bioplastic bodies; cells they were not, for they had not at this time the faintest differentiation of wall, contents, or nucleus. They were simply masses of fluid bioplasm—bioplasm so fluid and diluted as in many instances to be almost, if not entirely, indistinguishable by refraction from the surrounding medium. Again and again has a patch of scattered granules been noted moving in unison across the field, and only after prolonged examination and most careful management of the light has it appeared that the individual granules were really included in a portion of bioplasm and were moved by its movements only. Gradually the consistence of these large bioplastic masses appears to increase, and they, as it were, grow into sight (Fig. 2). Their movements are extremely constant and free, no mere alterations of form, but free progression along with such movements. The alterations in form vary extremely, sometimes consisting of the emission of rounded and lobulated protrusions, and at others of the running out of elongated slender extensions and threads.

---

* Latterly a $\frac{1}{25}$ objective by Powell and Lealand was employed, but we confess that, notwithstanding the most careful corrections being made for thickness of covering-glass, &c., we found it practically inferior to the $\frac{1}{8}$ and $\frac{1}{12}$ *à immersion* of Ross. We are, however, in daily expectation of a $\frac{1}{16}$ objective by the former distinguished makers, a glass having the reputation of being the most perfect hitherto constructed.

The serous spaces in the clot.

Coincidently with the appearance of these bodies in the marginal serum, others of a similar nature may be observed in the serous spaces in the clot, and at this time also, in some cases, an abundance of small refractive bioplasts may be detected in the same localities. These small bioplastic bodies have seldom been seen to move or alter form, and, save slight increase in size, have not been observed to undergo any change, and seem shortly to disappear. In a few instances also the interspaces of the clot are occupied by very delicate branched fibrillæ, but this is by no means a constant or characteristic phenomenon.

Concerning the nature of the masses of plasm which have crawled out of the clot.

The question here arises, are these large masses of bioplasm the results of very rapid new development, or are they present in the blood from the beginning, but so fluid and so closely approaching the surrounding medium in density as to be indistinguishable until rendered somewhat firmer by changes occurring in them, induced by altered temperature of the medium or slight chemical changes in it, or unless they come to contain granular matter? At the close of an hour after the blood has been drawn, they are to be found in abundance crawling free in the serum and issuing from the edges of the clot. It is possible that the irregularly rounded particles in the osmic preparations may be due to the breaking up of these bodies, and the subsequent condensation of the substance of the bioplastic fragments resulting from the rupture. For a short time the ring of serum, and the serum above the clot, is full of these large irregular masses of bioplasm, moving freely in all directions. Soon, however, they begin to sub-divide and break up into a second generation of bioplasts (Fig. 3). The process of division can be seen most distinctly, sometimes occurring rapidly and, so to speak, decisively; whilst at others, after the two secondary bodies are widely separated, and only connected by a very slender, barely visible thread, one is retracted and, as it were, absorbed into the mass of the other, to be succeeded by one or more similar protrusions ere division fairly takes place; the serum now swarms with multitudes of bioplasts of smaller size than those originally present, but resembling the previous generation in their delicacy of outline and great activity. The bioplasts may frequently be observed at the edge of the rim of serum crawling along it, and, as it were, moulded to the curve of the marginal fluid (Fig. 3).

Segmentation of the bioplasts.

Duration of activity of bioplasts.

The period of extreme activity varies considerably, but, as a rule, at the close of twenty-four hours from the commencement of the observation, only a few remain freely motile, and the majority have considerably increased in size (Fig. 4). Towards the close of the freely moving amœboid period the density and refractiveness of the bioplasts increase, and there is an increase in the number and distinctness of the granules contained in their substance. Many, too, in place of remaining uniformly granular, begin to show a tendency to the formation of one or more nuclear spaces or vacuoles (Fig. 4), which appear as bright spots surrounded by more or less defined circles of granules. As the movements of the bioplasts diminish, this vacuolation increases in distinctness, and is very well marked when they have fairly ceased, which they do very gradually; changes in form persisting for some time after the cessation of free locomotion. As the movements cease, the majority of the cells also assume a more or less rounded form, a few only becoming fixed with irregular or lobed outlines, and contemporaneously they tend to accumulate in heaps and masses of varying extent (Fig. 4).

Formation of vacuoles.

Aggregations of pus-like cells.

The preparation in this stage shows a multitude of irregular masses composed of bodies which vary considerably in size, and which in refractiveness and general aspect closely resemble pus-cells in which the vital movements have ceased. The vacuoles are now very distinct and well defined, and the entire body has a denser 'plumper' appearance than it ever had before.

Further changes in the bioplasts.

May break down into monad-like colonies; or

become "nucleated cells" with active molecules between the "nucleus" and a very delicate outer wall.

Whilst these phenomena have been taking place the serum remains quite clear and free of bacteria or monads, and the only change which occasionally occurs in it is a certain amount of staining due to the escape of colouring matter from the corpuscles as the clot begins to soften. The preparation having reached this stage may remain unchanged for weeks, the serum continuing perfectly fluid and clear throughout, but in the majority of cases, the bioplasts pass on to further changes. The exact nature of these changes varies greatly in individual preparations and in the individual bioplasts of the same preparation. The bioplasts may gradually break up and disintegrate, filling the serum with molecular flakes, which for some time show indications of the outlines of the individual masses with more or less distinctness, but ultimately become uniform. Such flakes might very readily be described as flakes of monads, and be supposed to arise by aggregation, had the processes by which they are formed not been followed out. This may be regarded as the simplest method of termination of the bioplasts, but there are others which are more complex, and which, inasmuch as they give rise to very different appearances in individual specimens of blood, must be clearly distinguished and described. In many instances there appears to be a certain condensation of substance around the vacuole or vacuoles so as to leave a more fluid ring between this condensed portion and the outer margin of the bioplast, which at the same time assumes more or less clearly the appearance of a very delicate cell wall (Fig. 5). The granules contained within this fluid ring now take on an active swarming motion exactly resembling that observed in some common amœbæ occurring in specimens of water, and in the cells of many of the lower algæ. The movement persists for some time, and then either ceases leaving the bioplast apparently in the same condition in which it was previously, or the outer wall of the cell ruptures, and the swarming granules escape (Fig. 5). Once beyond the parent body and free in the fluid, they immediately become motionless, and have never been observed to move again. What the nature of these particles is, and to what their activity is due, remains uncertain, but they can, at all events, hardly be regarded as bacterial germs, seeing that their period of activity is confined to the period in which they are still contained within the parent bioplast.

Origin of the "hyaline-cells" with central or lateral "nucleus."

The result of the escape of the granules is to convert the formerly uniform, granular, vacuolated bioplast into a body consisting of a delicate cell-wall and a nuclear mass which does not nearly equal the cell-wall in circumference. This mass may remain more or less centrally situated, or, as more frequently occurs, it may pass to one or other side, and may then escape partially or even entirely from the cell-wall. The appearances naturally vary with the nature of the process which has taken place. In those cases in which the nuclear mass remains central, the entire body appears as a bright space bounded by a dark line, and containing a central molecular mass, while in those in which it goes to the side or escapes through the cell-wall, the bright space is left equally sharply defined from the surrounding fluid, but is either crescentic or quite empty and circular. Probably the most common appearance is that of a broad, bright, sharply defined crescent, the concavity being formed by the portion of the nuclear mass which is still included within the cell-wall, while the rest of it protrudes as a rounded mass exterior to it (Fig. 5.), but empty spaces with free masses of granules condensed or scattered in various degrees are also abundantly present at this time. This escape or expulsion of the contents of the cell may take place without any previous formation of a nuclear mass and motile granules, but the result in any case is ultimately the same, and a series of bright, sharply defined, more or less empty hyaline capsules remains.

This appearance varies with their situation: when free in the fluid they come out as pure white, flat spaces with fine dark outlines; whilst, when situated among the corpuscles, they are usually delicately shaded. The persistence of

Persistence of the "hyaline-cells."

these capsules is wonderful, considering their extreme delicacy; and the surrounding fluid does not appear to enter them, or to cause them to collapse, although in some cases there appears to be open fissures in them. The nuclear masses gradually disintegrate after their exit, and are diffused through the fluid as flakes of molecular matter (Fig. 5).

Changes in the interspaces in the clot.

Peculiar appearances are induced during the progress of the above changes in those cases in which masses of cells have been embedded in the interspaces of the clot, and in which the whole preparation has, as is sometimes the case, passed into a syrupy condition. The outer walls of the cells appear to adhere to one another and to the margins of the interspaces, and the contents shrinking away and condensing appear as small circular masses in the centre of empty irregular vacuoles in the clot.

Particles of an oily nature appear,

Subsequently to the escape of the contents of the cells, there is in many cases an abundant development of irregularly oval and rounded particles of various sizes throughout the preparation. They are of various forms, globular, irregularly lobed, and either scattered or arranged in pairs, trios or series (Fig. 6). Many of the series are very complex and much ramified, whilst others consist of linear series, each member of which is smaller than its predecessor. The nature of these bodies remains quite uncertain. Beyond a certain increase in size they have not been observed to undergo any further development, and in many cases they are probably of an oily nature. When of such a nature, they are from the first brightly refractive and perfectly structureless, and are ultimately, at the close of one or two months from the commencement of observation, resolved into oily flakes and strings, the latter of which might easily be mistaken for vibriones or fungal threads, more especially when they begin to break up into rows of separate oil globules.

together with more persistent molecular matter.

In others, however, this does not appear to be the case, as they may in these instances be observed to become finely molecular, so that the preparation is ultimately crowded with minute molecular patches of various forms. (Fig. 6). It is possible that the latter bodies may be the escaped, 'so-called' vacuoles of the bioplasts. These are always surrounded with a portion of more or less condensed material, which would be likely to persist after the solution of the surrounding softer material.

'Milky spots' in blood-preparations.

As is frequently the case in preparations of blood kept under continuous observation in the same way as the above, milky spots, due to the appearance of small homogeneous circular bodies, may be observed in some numbers in the fluid, but they have not been seen to undergo any further development, and, as a rule, do not persist long.

After the appearance of the particles above described, the only further change noted has been a gradual disintegration of all the elements of the preparation; and, although the latter have frequently been kept for weeks under observation, no further development has taken place, and with very few and accidental exceptions there has been no appearance of recognizable fungal or bacterial elements in them.

Remarks.

It now remains to make a few remarks on the principal points of interest in connection with these observations. The conveniences afforded by a tropical climate for any such series of observations as these are very great, as the temperature as a rule is sufficiently high to secure that the activity of the bioplasts contained in the blood is not too rapidly checked. During a period of frequent observation in the course of the past season the thermometer ranged from a maximum of 98·2° F. to a minimum of 76·3° F.

An objection to the use of immersion lenses is the lowering of temperature which they cause.

It is not devoid of interest to remark that the use of immersion objectives involves a disadvantageous depression of temperature due to evaporation of the film of water which is placed between the lens and the covering-glass. The prolonged use of such a lens has frequently appeared in this way to check the activity of the bioplasts in the blood.

Total absence of bacteria in the blood in every stage of cholera.

One of the most important points determined by these observations is the fact that the blood in cholera is, as an almost invariable rule, free from bacteria, either actual or potential. This is the case, as well shortly after death as during life, and holds in regard to every stage of the disease. In one or two cases a slight development of distinct bacteria has occurred during the course of observation, but this is no more than may occur in the most healthy specimens of blood, and the idea that bacteria are normally present in the blood in cholera may be finally dismissed. It is not improbable that certain of the appearances observed in series of observations such as those described above, may afford a clue to the origin of such an idea. At an early stage when the bioplasts are of great fluidity and tenuity, monad-like granules, contained in and moving with them, may be supposed to be free and endowed with independent motion, but this will be found, on prolonged observation, not to be the case, and as the density of the bioplasts increases the true relations of the granules will appear. At a much later stage, namely, at that of escape of the contents of the cells, patches of molecular matter and scattered granules may result; and finally, when general disintegration of the bioplasts occurs, large sheets and masses of evenly molecular matter may occupy much of the preparation, but these granules, micrococcoid patches and molecular flakes, are no new developments, but are clearly traceable to mere disintegrative changes in bodies previously present.

The molecular matter so produced, be it scattered or aggregated, undergoes no further development, and shows no motion or any other indication of vitality. The term bacteria is often very vaguely and loosely employed, but it is under no pretext applicable to mere dead particles due to simple disintegration.

No fungal elements could be seen or subsequently developed in the blood of patients in cholera.

As regards bacteria, so it is in regard to the presence of fungal elements as a normal and constant characteristic of the blood in cholera. There is absolutely nothing in favor of any such view; there is absolutely no evidence of the existence of fungal elements in the blood whilst in the body, and only very rare and clearly accidental development of such bodies after its removal from it. These questions, however, will be more fully referred to in a succeeding section.

The marked resemblance between the bioplasts in the blood and the bioplasts in choleraic dejections.

Possibly the most important result to be derived from observations on the blood in cholera, conducted in the manner described above, is the explanation which they are capable of affording of the nature of the bioplastic bodies and cells so abundant in, and so characteristic of, evacuations passed during the course of the disease. We have previously pointed out that such evacuations frequently contain evidences of the escape of blood into the intestines, either by the presence of red corpuscles in greater or less abundance, and occasionally included within the characteristic cells of the discharges, or by that of a more or less pronounced pinkish and sanguineous tinge of the fluids, with the subsequent appearance of blood crystals in them. Now if, as observation has proved, the bioplasts contained in the blood are capable of such activity and multiplication when removed from the body, and with quite abnormal surroundings, it is surely fair to allow them an equal, if not superior, capacity when exuded on the interior surface of the intestines.

Such bioplasts, in passing through the various changes described above, will come to present every modification of appearance and characters presented by those found in the discharges. In their earlier stages they will correspond with the freely motile amœbæ of the evacuations; when rather older they lose their freedom of motion and show mere feeble changes of form, ultimately becoming motionless and pus-like or rather exudation-like cells, such as are observed in the flakes of lymph in peritonitic and similar effusions, and such cells we know to form the great bulk of those present in perfectly recent choleraic dejections.

Whilst in this condition it has been already mentioned that they frequently show one or more distinct nuclear vacuoles in their interior, and they are then identical in aspect with the large mother-cells containing bioplast-masses,' previously described in connection with the subject of the evacuations.

The 'hyaline-cells' in the blood and in the discharges identical in appearance.

There is one class of bodies in the evacuations, the nature of which has hitherto been peculiarly puzzling and obscure, namely, that of flattened, whitish or pale-yellowish hyaline cells showing no evident structure or contents, but the observations on the changes occurring in the bioplasts of the blood explain the nature of these also, for the empty capsules persisting after the escape of the molecular contents of the pus-like cells, are exactly similar to the hyaline bodies of the evacuations, and unless the actual steps in their formation had been followed, their nature would have been as obscure as that of the latter cells has till now remained. Hyaline vesicles, somewhat resembling these are, more or less, generally found in all intestinal discharges, and are probably the result of endosmotic processes acting on the epithelial cells as was long ago pointed out by Heidenhain and Brücke in connection with appearances observed in healthy epithelium; they may occasionally be seen closely attached to the cells in those very exceptional cases in which epithelium can be detected in choleraic discharges, as well as very frequently in connection with the loose epithelium found in the intestines after death, as figured and described in the last report.*

These observations on the blood, especially when taken in connection with the light which they throw on the nature of the cells and bioplasts of the evacuations, do not tend to indicate the presence of a microscopically demonstrable morbid poison in either medium, they merely show that the escape of materials from the blood is sufficient to account for the presence of the most remarkable and constant microscopic features in the evacuations.

B.—Results of microscopic examinations of the blood in health and in diseases other than cholera.

Preliminary observations were made with normal blood.

As might be supposed, these systematic observations on the blood in cholera were not commenced without our having, as we thought, made ourselves practically conversant with all the changes discernible in normal blood; indeed, on referring to our notes, we find that daily, and in several cases hourly, observations had been entered relative to about three dozen specimens examined in precisely the same manner as the foregoing, but in none of them is there any allusion to the phenomena just described. Whereas in the written description of the second case of the cholera-blood series, we find it entered on the fourth day that "the serous portion of the specimen is crowded with granular, white corpuscles, extremely like pus-cells." Then follow careful notes of between sixty and seventy specimens in which the various stages above summarised are minutely described.

The changes occurring in normal and cholera blood are, to a certain extent, identical.

Thinking that it might by no means be impossible that similar changes might have been overlooked in the normal blood-series, we determined to go over this ground again, and found this to have been the case, to a certain extent at all events, in some samples of blood. Still even in these exceptional cases the difference is so marked that we almost venture to state that, given two samples of blood, one being choleraic and the other healthy, although to the naked eye, or at first sight under the microscope, no difference might be discerned, we could pretty accurately state on the second day to which of the two sources the specimens should be referred.

Similar amœboid corpuscles may very readily be detected creeping out of the blood clot in this climate without any special artificial arrangements being adopted to raise the temperature even in healthy blood; but in no single case have we hitherto seen them appear in anything like the same proportion as in the blood obtained from patients suffering from cholera, where not infrequently little white spots about the size of a millet-seed may be seen with the naked eye, which, when placed under the microscope, will be found to correspond with aggregations of these pus-like corpuscles. Added to this the corpuscles appear to be smaller and to disintegrate much more readily in normal blood;

---

* Seventh Annual Report of the Sanitary Commissioner with the Government of India: Appendix B, Plate III.

so much so that in the course of about twenty-four hours nothing special is to be observed, merely the usual proportion of white cells, with possibly some aggregations of molecules and a few hyaline cells, regarding the origin of which no conjecture could have been arrived at, had the earlier changes undergone by the preparation not been carefully watched; whereas in cholera these amœboid bodies, after they have become spherical, may, as has already been intimated, persist for several days without any marked change as has already been intimated.

Whether this persistency be owing to the increased density of the blood in cholera, or to the character of the bodies referred to, we are not in a position to state; nor would we for a moment wish it to be inferred that any specific character can be attributed to them, but it is evident that the blood in cholera is particularly adapted to their development, or at any rate to their being readily recognized and well preserved.

The blood in diseases other than cholera.

Bacteroid bodies in typhoid fever;

We have examined the blood in other diseases, and in such exceptional diseases as tetanus, but have failed to discover any such marked deviation from the normal standard in any single instance. Whilst examining some wax-cell preparations of the blood in a case of typhoid fever (the patient having been for two days delirious), we were particularly struck with the marked diminution in the number of white corpuscles, which, in the course of a few hours, are usually seen in the ring of serum surrounding the clot in normal blood; and also by the constant presence of numerous interlacing vibrio or bacteria-like filaments along the edge of the preparation, stretching across from one cluster of red corpuscles to another. No movements whatever were exhibited by these bodies, which, in the course of a few hours, became slightly beaded, and eventually disappeared.

effect of osmic acid on them;

So closely did they resemble the low forms of life above referred to, that we were at first much puzzled as to their real nature; but on subjecting a perfectly fresh sample of the blood to the fumes of osmic acid in the usual way, we found that under these circumstances no trace of the existence of the delicate bodies referred to could be detected. We therefore inferred that their presence in specimens otherwise prepared was due to the separation of fibrine, which had not had time to take place to any great extent before the fluid was fixed by the osmic acid.

their resemblance to the "bacteridia" in "mal de rate".

The resemblance which these appearances bore to the description of the motionless *bacteridia* of Davaine, as occurring in the blood in "mal de rate" or malignant pustule, was very great; and we are strongly of opinion that the *bacteridia* so prominently set forth in connection with this malady, are not living organisms at all, but simply coagulated fibrine-filaments.

Non-appearance of leucocytes under certain circumstances.

Whilst this report was passing through the press, Dr. Bastian's very remarkable work[*] came into our hands, and we were much impressed by a reference made in it to the experiments of M. Onimus, which show that "neither leucocytes, nor any other kind of anatomical elements" are produced in serum whose fibrine has been coagulated.

Possible reason for the paucity of leucocytes in typhoid fever, and for their abundance in cholera.

This possibly accounts for the remarkable paucity in the number of white-blood corpuscles in typhoid fever when examined as above described, and appears to us to verify to a great extent the opinion which we have formed as to the nature of the bacteroid bodies in the blood in typhoid fever, and of the *bacteridia* in "mal de rate". Possibly, also, the great number of the bioplasts, which appear in the serum of the blood in cholera, may be due to a diminution in the normal coagulability of the blood.[†]

It has long been known that in pyæmia the smaller vessels and capillaries, especially near the parts affected, are frequently blocked up with what are believed by many to be aggregations of pus-cells in various stages of disintegration; but another school, with Virchow as one of its principal expounders, denies that these plugs are due to pus, but ascribes them to solid particles brought by the veins from the diseased tissue. Perhaps when the tendency in certain conditions of the blood to aggregation of particles of its plasma, in the manner described as occurring in cholera becomes generally known, these views relative to the pus-like corpuscles in the small vessels may become materially modified. We have not as yet been able to obtain samples of blood from a patient suffering from pyæmia, but we may state that the nearest approach to the above-described appearance of the blood in cholera was obtained in specimens of blood (examined by precisely the same method) from dogs, in whom a condition more or less approaching to pyæmia had been artificially produced.

---

[*] "The Beginnings of Life," 2 volumes: Macmillan and Co., 1872.

[†] This conjecture appears to receive a certain amount of corroboration from the fact that in two slight cases of cholera the blood was observed to contain such fibrinoid filaments coincidently with an unusually small number of leucocytes.

The "pus-cells" described as occurring in the vessels in pyæmia, may be due to aggregation of bioplasts.

Possibility of the minute vessels being blocked up by bioplasts in cholera.

It is neither impossible, nor without some show of reason to infer, that the same tendency on the part of these plasma particles to leave the clot, and to become separated from the red cells, may exist in the living tissues; that a tendency to accumulation in the minute vessels and capillaries may occur in cholera; and that this, to some extent at least, may be the cause of the extreme difficulty with which the capillary circulation is evidently carried on in the course of this disease.

These suggestions we make with much diffidence, as we have not yet been able to test their accuracy by direct experiment. In such complicated investigations, it is often extremely difficult to adduce positive proof of the truth of inferences which are yet so far founded on evidence that they deserve notice. The points in question will be made the subject of careful enquiry, but meantime it appears desirable that the possible accuracy of the views we have expressed should be recorded.

C.—Observations on the blood in connection with the question of monads and bacteria, of fungi and of sarcinæ.

Concerning the relation existing between low organisms and fermentation theories of disease.

Intimately associated with the Zymotic theories of the production of disease, and notably of cholera, is the question of the existence of monads, bacteria and such like organisms in the blood of the persons affected, either in such a condition as readily to be recognized, or in such an undeveloped state as to elude detection by the best objectives yet constructed. As to the former condition, we have already very emphatically expressed the conclusion which our observations have forced upon us, at least so far as the blood in cholera is concerned, namely, that no such bodies can be seen in this fluid, either during life or within a few hours after death as an invariable concomitant of the disease.

Possibility of low organisms being potentially present in the blood; methods adopted to test this question.

Whether or not such organisms may, nevertheless, be potentially present, is a question to which we have devoted a considerable portion of our time. In order to satisfy ourselves on this point, cursory examinations merely, of any number of specimens of blood would have availed but little, consequently the plan already described for the *continuous* observation of preparations of this nature was adopted. Before starting, however, we satisfied ourselves that the amount of air present in the wax-cells resorted to was amply sufficient by inoculating samples of healthy blood with minute quantities of bacteria; and observing whether or not the latter could be seen to multiply as rapidly in these closed cells as in similar cells whose walls had been perforated in two or three places, so as to permit of the free ingress and egress of air, not the slightest difference could be observed. Fungi were also tested in the same way with identical results. Indeed, after the first few hours of observation, many of the preparations here referred to were thus ventilated, but this appeared to have no effect save to render them more liable to invasion by fungi and acari.

Number of observations conducted.

We have preserved notes of one hundred and twenty-eight specimens of blood derived from various sources, each of which has been kept under observation for periods varying from three days to nearly three months. As, however, these would occupy so much space were they published in detail, we have tabulated the results in as simple a manner as we possibly could.—

Tables showing the frequency with which Monads or Bacteria, Fungi, and Sarcinæ appeared during continuous observations of 22 specimens of healthy human blood, and of 57 specimens of blood from cholera-patients, 18 of which were obtained after death.

PREPARATIONS OF HEALTHY HUMAN BLOOD.

		Monads or Bacteria present*			Fungi present**			Sarcinæ present
Series No.	Preparation No.	At first.	Within 6 hours.	Within 24 hours.	At first.	Within 24 hours.	Within a week.	Within a fortnight.
1	1	No	No	No	No	No	No	No
..	2	,,	,,	,,	..	,,	,,	,,
..	3	,,	,,	,,	,,	,,	,,	,,
2	1	,,	,,	,,	,,	,,	Yes	,,
..	2	,,	,,	,,	,,	,,	Yes	,,
3	1	,,	,,	,,	,,	,,	No	,,
4	1	,,	Yes	Yes	,,	,,	,,	,,
5	1	,,	No	No	,,	,,	,,	,,
6	1	,,	,,	,,	,,	,,	,,	,,
...	2	,,	,,	,,	,,	,,	,,	,,
..	3	,,	,,	,,	,,	,,	,,	,,
..	4	,,	,,	,,	,,	,,	,,	,,
7	1	,,	,,	,,	,,	,,	,,	,,
8	1	,,	,,	,,	,,	,,	,,	,,
9	1	,,	,,	,,	,,	,,	Yes	,,
10	1	,,	,,	,,	,,	,,	No	,,
11	1	,,	,,	,,	,,	,,	,,	,,
12	1	,,	,,	,,	,,	,,	,,	,,
13	1	,,	,,	,,	,,	,,	,,	,,
14	1	,,	,,	,,	,,	,,	,,	,,
15	1	,,	,,	,,	,,	,,	,,	,,
16	1	,,	,,	,,	,,	,,	,,	,,
Total	22	..	1	1	...	...	3	...

PREPARATIONS OF BLOOD IN CHOLERA DURING LIFE.

		Monads or Bacteria present*			Fungi present**			Sarcinæ present
Series No.	Preparation No.	At first.	Within 6 hours.	Within 24 hours.	At first.	Within 24 hours.	Within a week.	Within a fortnight.
17	1	No	No	No	No	No	No	No
...	2	,,	,,	,,	,,	,,	,,	,,
..	3	,,	,,	,,	,,	,,	,,	,,
..	4	,,	,,	,,	,,	,,	,,	,,
18	1	,,	,,	,,	,,	,,	Yes†	,,
..	2	,,	,,	,,	,,	,,	No	,,
..	3	,,	,,	,,	,,	,,	,,	,,
..	4	,,	,,	,,	,,	,,	,,	,,
..	5	,,	,,	,,	,,	,,	,,	,,
..	6	,,	,,	,,	,,	,,	,,	,,
19	1	,,	,,	,,	,,	,,	Yes	,,
20	1	,,	,,	,,	,,	,,	No	,,
...	2	,,	,,	,,	,,	,,	,,	,,
...	3	,,	,,	Yes	,,	,,	Yes	,,
21	1	,,	,,	No	,,	,,	No	,,
..	2	,,	,,	,,	,,	,,	,,	,,
..	3	,,	,,	,,	,,	,,	,,	,,
..	4	,,	,,	,,	,,	,,	Yes	,,
22	1	,,	,,	,,	,,	,,	No	Yes††
...	2	,,	,,	,,	,,	,,	,,	Yes††
..	3	,,	,,	,,	,,	,,	,,	No
..	4	,,	,,	,,	,,	,,	,,	,,
..	5	,,	,,	,,	,,	,,	,,	,,
..	6	,,	,,	,,	,,	,,	,,	,,
23	1	,,	,,	,,	,,	,,	,,	,,
..	2	,,	,,	,,	,,	,,	,,	Yes?
24	1	,,	,,	,,	,,	,,	,,	No
..	2	,,	,,	,,	,,	,,	,,	,,
25	1	,,	,,	,,	,,	,,	,,	,,
26	1	,,	,,	,,	,,	,,	,,	,,
..	2	,,	,,	,,	,,	,,	,,	,,
27	1	,,	,,	,,	,,	,,	,,	,,
...	2	,,	,,	,,	,,	,,	Yes	,,
28	1	,,	,,	,,	,,	,,	No	,,
29	1	,,	Yes	Yes	,,	,,	Yes	,,
30	1	,,	No	No	,,	,,	No	,,
31	1	,,	,,	,,	,,	,,	,,	,,
32	1	,,	,,	,,	,,	,,	,,	,,
33	1	,,	,,	,,	,,	,,	,,	,,
Total	39	...	1	2	..	..	6	3

PREPARATIONS OF BLOOD IN CHOLERA AFTER DEATH.

		Monads or Bacteria present*			Fungi present**			Sarcinæ present
Series No.	Preparation No.	At first.	Within 6 hours.	Within 24 hours.	At first	Within 24 hours.	Within a week.	Within a fortnight.
34	1	No	No	No	No	No	No	No
35	1	,,	,,	,,	,,	,,	,,	,,
...	2	,,	,,	,,	,,	,,	,,	,,
36	1	,,	,,	,,	,,	,,	,,	,,
..	2	,,	,,	,,	,,	,,	Yes	,,
..	3	,,	,,	,,	,,	,,	No	,,
37	1	,,	,,	,,	,,	,,	,,	,,
..	2	,,	,,	,,	,,	,,	Yes‡	,,
..	3	,,	,,	,,	,,	,,	No	,,
38	1	,,	,,	,,	,,	,,	,,	,,
..	2	,,	,,	,,	,,	,,	Yes	,,
39	1	,,	,,	,,	,,	,,	No	,,
...	2	,,	,,	,,	,,	,,	,,	,,
..	3	,,	,,	,,	,,	,,	,,	,,
40	1	,,	,,	,,	,,	,,	Yes‡‡	,,
...	2	,,	,,	,,	,,	,,	No	,,
...	3	,,	,,	,,	,,	,,	,,	,,
..	4	,,	,,	,,	,,	,,	,,	,,
Total	18	..	...	.	..	.	4	.

---

* Under this heading in this and succeeding Tables, only such molecules or staves are included as showed distinct evidence of vitality by form, growth or movement.

** These, unless otherwise mentioned, refer to instances in which the fungal filaments manifestly invaded the preparation from without.

† The fungus seen to start from the centre of the clot.

†† The blood in these preparations had been mixed with a solution of acetate of potash and had been left unsealed.

‡ Penicillium.

‡‡ Penicillium and aspergillus heads were *distinctly seen* to be borne on branches arising from one and the same filament.

It will be seen from the above table that the number of instances in which monads or bacteria appeared in the specimens of blood, whether in health or in cholera, before or after death, is very insignificant; indeed, in not a single instance is it recorded that any such organisms were present when examined immediately after it was obtained. It may be remarked that no extraordinary precautions were adopted, such as exposing the covering-glass or the needle to the flame of a spirit-lamp—very ordinary precautions indeed having sufficed to prevent contamination to any great extent with any low forms of life whatever. Of the 22 specimens of healthy blood examined, distinct evidence of monads or bacteria was only once observed, and fungal filaments only appeared on three occasions, or at the rate of about 13 per cent. In the blood of cholera patients obtained during life, monads or bacteria were only observed on two occasions in 39 specimens, and fungi were seen to develope in six preparations, just 2 per cent. more than in healthy blood. Except on one occasion, the fungus was observed to have entered the preparation from without, the filaments having insinuated themselves between the covering-glass and the ring of wax at a spot where apposition had not been perfectly effected; in the exceptional case the filament emerged from the clot, and was probably derived from a spore deposited on the covering-glass by the duster.

Absence of low organisms in blood even when no special precautions were adopted to keep them away.

Absence of bacteria, &c., in the blood after death in cholera.

The absence of these low forms of life is equally conspicuous in the table of the cholera-blood preparations obtained after death. In the greater part of the specimens so obtained, a series had already been under examination during life. Of the 18 cases recorded, there was not a single preparation which manifested distinct evidence of bacteria, either on the first or succeeding days, and fungi developed on four occasions only.

The statement that sarcinæ normally exist in the blood not substantiated by these experiments. Possible nature of sarcinæ.

As to the presence of sarcinæ in the blood, which latterly have been alluded to (by Lostorfer and other observers) as being constantly present in this fluid, we can merely state that on two occasions only did we observe them make their appearance during our examinations of the preparations of blood here referred to ; and it so happens that whereas six samples of the particular blood alluded to were under observation, only in the two specimens, to which a solution of acetate of potash had been added, did the sarcinæ appear. We have recorded another case as being of a questionable nature, the bodies observed having appeared to us to be more like crystals which had assumed a sarcinoid arrangement : indeed, from what we have observed of sarcinæ under other circumstances also, we incline strongly to the opinion that they are crystalline rather than organised bodies.

Experiments to ascertain whether bacteria, &c., multiply when introduced into the circulation.

Having in our own minds become perfectly satisfied that none of the organisms above alluded to existed in the blood in a state of health, or in cholera, and having also observed that when ordinary blood was inoculated with monads or bacteria, their multiplication and activity usually ceased in the course of two or three days, unless fresh material were added, we were still anxious to ascertain whether they would increase in a more marked degree, and whether their period of activity would be prolonged by being introduced into the circulation. With the view of attempting to clear up this matter, decomposing solutions swarming with monads, bacteria and vibriones were injected into the veins of dogs, a sample of the blood being in most instances previously examined for the sake of comparison, and the animals slaughtered at periods varying from a few minutes to a week after the operations. Our note book contains a record of forty-nine such experiments which we thus briefly epitomise :—

Table showing the result of experiments to ascertain how long after the introduction of putrefying matter into the blood, bacteria, &c., could be detected.

Series No.	Preparation No.	Period expired since		Monads or bacteria present			Fungi present			Sarcinæ present		
		The last operation.	A former operation.	At first.	Within 6 hours.	Within 24 hours.	At first.	Within 24 hours.	Within a week.	At first.	Within 24 hours.	Within a fortnight.
1	1	2 minutes ...	......	no	no	yes	no	no	no	no	no	no
...	2	,, ,, ...	......	yes	yes	,,	,,	,,	,,	,,	,,	,,
2	1	15 ,, ...	......	no	,,	,,	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	,,	no	,,	,,	,,	,,	,,	,,	,,
...	3	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	4	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
3	1	2 hours ...	......	,,	,,	no	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	,,	yes	yes	,,	,,	,,	,,	,,	,,
...	3	,, ,, ...	......	,,	no	no	,,	,,	,,	,,	,,	,,
...	4	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
4	1*	6 ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	2*	,, ,, ...	......	,,	,,	,,	,,	,,	yes	,,	,,	,,
5	1*	7 ,, ...	......	,,	,,	,,	,,	,,	no	,,	,,	,,
6	1	8 ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
7	1	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
8	1	9¼ ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
9	1	11 ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
10	1	14 ,, ...	......	,,	yes	yes	,,	,,	,,	,,	,,	,,
11	1	15 ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
12	1*	,, ,, ...	......	yes	,,	,,	,,	,,	,,	,,	,,	,,
13	1	20 ,, ...	......	no	no	no	,,	,,	,,	,,	,,	,,
14	1*	23 ,, ...	......	yes	yes	yes	,,	,,	,,	,,	,,	,,
15	1*	24 ,, ...	3 and 5 days ...	no	no	no	,,	,,	yes	,,	,,	,,
16	1	,, ,, ...	......	,,	,,	,,	,,	,,	no	,,	,,	,,
17	1	,, ,, ...	......	yes	yes	yes	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	no	,,	,,	,,	,,	,,	,,	,,	,,
18	1*	,, ,, ...	......	,,	no	no	,,	,,	,,	,,	,,	,,
19	1	2 days ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	,,	,,	,,	,,	,,	yes	,,	,,	,,
...	3	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	4	,, ,, ...	......	,,	,,	,,	,,	,,	no	,,	,,	,,
20	1	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
21	1	,, ,, ...	4 days ...	,,	,,	,,	,,	,,	,,	,,	,,	,,
22	1	,, ,, ...	5 ,, ...	,,	,,	,,	,,	,,	,,	,,	,,	,,
23	1	,, ,, ...	6 ,, ...	,,	,,	,,	,,	,,	,,	,,	,,	,,
24	1	3 ,, ...	......	,,	,,	yes	,,	,,	,,	,,	,,	,,
25	1*	,, ,, ...	......	,,	,,	no	,,	,,	,,	,,	,,	,,
26	1*	4 ,, ...	6 days ...	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	2*	,, ,, ...	,, ,, ...	,,	,,	,,	,,	,,	yes	,,	,,	,,
27	1	,, ,, ...	......	,,	,,	,,	,,	,,	no	,,	,,	,,
...	2	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
...	3	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
28	1	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
29	1	,, ,, ...	......	,,	,,	,,	,,	,,	,,	,,	,,	,,
30	1	7 ,, ...	......	,,	,,	yes	,,	,,	,,	,,	,,	,,
...	2	,, ,, ...	......	,,	,,	no	,,	,,	,,	,,	,,	,,
Total...	49	....	... ..	4	10	16	0	0	5	,,	,,	,,

* Preparations thus marked indicate that they were obtained after the death of the animal.

Bacteria, &c., do not multiply when introduced into the circulation.

It will be seen from this table that the minute organisms, with which decomposing organic solutions swarm, do not multiply on being introduced into the blood of healthy or diseased animals, for it must be borne in mind that the blood of several of the dogs experimented upon had on a previous occasion, or even on two occasions, been contaminated in a similar manner, and could consequently scarcely be designated healthy.

Indeed, not only is it shown that the organisms under consideration cease to multiply under such circumstances as these, but that they actually diminish in number every hour they remain in the system, and eventually disappear altogether.

but gradually disappear.

Out of twelve preparations of blood obtained from animals within six hours after the introduction of putrefying matter into their veins, active monads and bacteria were present in seven of them, or at the rate of about 58 per cent.; and out of thirty preparations examined, under similar circumstances within twenty-four hours, they were distinctly recognized in fourteen, or something under 47 per cent.; whereas, in nineteen specimens of blood derived from animals who had been inoculated in this manner from two to seven days previously, these bodies could only be detected in two of them, or only at the rate of about 10½ per cent., just 6 per cent. higher than was observed to be the case in healthy blood, which we have attributed to accidental circumstances.

It may be noted that in four of the dogs whose blood had been infected on two occasions each, the blood, when examined within four, five and six days of the first infection, did not present a trace of these organisms.

What becomes of these organisms?

What becomes of them we are not in a position to state. Whether they become disintegrated or dissolved in the warm serum, or become merely filtered off during their passage through the tissues and glands, is a subject we hope satisfactorily to settle before long. In the mean time it may be remarked that we examined fluid expressed from the axillary and mesenteric glands in the greater number of the cases above tabulated (and in the same way), and have found that bacteria could be detected in them, especially in the mesenteric glands, at later periods than in the blood, but have noticed them absent, after a time, in these also.

What relation do they bear to contagion?

As to whether these motile molecules, or staves, are themselves the cause of the disturbance which takes place in the system, consequent on the introduction of putrefying material into the blood (as will be fully referred to in a subsequent chapter), or whether they are merely the indicators that fluid containing them possesses this property, or indeed whether their presence at all is of any moment, we must for the present defer discussing. It will, however, be evident, on perusal of our notes of experiments on animals further on, that the question must have been constantly pressed upon our attention.

PART II.

EXPERIMENTS ON THE INTRODUCTION OF ORGANIC FLUIDS INTO THE SYSTEM.

Experiments on lower animals prescribed by the Army Sanitary Commission.

We had deferred taking up systematically that portion of the programme, drawn up for our guidance by the Army Sanitary Commission, relating to the experiments which should be carried out on lower animals in the conduct of this enquiry until the present year, as we did not feel that our knowledge of the various stages through which persons suffering from cholera have to pass, and of the *post mortem* appearances associated with the disease, was sufficiently exact to enable us to conduct observations of this nature with profit.

Approximate number of dogs experimented upon.

It need scarcely be mentioned that every means was adopted to inflict as little pain as possible on the animals which have passed through our hands, considerably over a hundred dogs, together with several animals of a smaller kind.

Anæsthetics invariably resorted to before the commencement of the examination.

Chloroform has invariably been resorted to: in no single instance has any animal been slaughtered except when thoroughly under its influence; and when, as in some of the experiments, considerable pain would have been inflicted by allowing the animal to recover from the effects of the anæsthetic before the experiment was concluded, it has been kept under its influence during the whole period of operation, two or three hours, as the case may have required.

Objections to the use of very small animals owing to

the high mortality from chloroform,

At the commencement of these observations small animals were selected, such as rats, rabbits, or rather hares, for rabbits are not obtainable here; but we found the administration of chloroform so very frequently proved fatal with such animals that they had to be abandoned. The same fatality was observed in connection with puppies and young dogs: indeed, even in dealing with large healthy dogs we calculate on losing about one in five through this cause alone. Moreover, the effects produced were of so contrary a character, even under precisely similar conditions, that we feel convinced that any data of this kind obtained by experiments on small and delicate animals are extremely liable to mislead.

and uncertainty of result.

This is a very unfortunate circumstance, not only because, as a rule, small animals are more easily obtained and more manageable, but also because the observations on cholera-material hitherto recorded, and which have exercised great influence on the opinion of medical writers and of the scientific world generally, have for the most part been derived from experiments on even more delicate animals than those above referred to.

This drawback will be evident to all who may carefully peruse some of the following cases, more especially those recorded in connection with the attempts to produce infection by the introduction of choleraic and other organic matters into the circulation.

Unsuitableness of small animals for nerve-section experiments.

The unsuitableness of small animals for experiments involving section of minute and deep-seated nerves arises, to a great extent at least, from a different cause, namely, the extreme tenuity of nerve fibres in such, which in man are large and easily accessible, and are even moderately large in well-developed dogs. Size is of still more importance, where, as in remarkable cases to be afterwards referred to, the section of a certain portion of a nerve appears to make such a vast difference in the result of the experiment.

Reasons for having selected dogs for these purposes.

We have, therefore, selected the dog not only from its size, but also from the fact of its food being very closely allied to that of man, as being more suitable to experiments of the nature here alluded to, especially as the organic substances hitherto experimented upon have not been introduced into the circulation through the digestive system. Had such a method been adopted the tremendous powers of digestion of the native, pariah or Bedouin dog, would have rendered any comparative data unmistakeably useless.* Added to this, the numbers obtainable and with tolerable ease (these dogs being under the ban of the Police here), it will be evident that, taking all things together, they are the most suitable animals for systematic investigations of this nature.

A.—Experiments on the injection of choleraic and other organic fluids into the veins of animals.

Condensed details of the experiments are given, not only because of their connection with the subject of the report,

In order to judge of the validity of generalizations derived from any such series of experiments as that included under the above heading, it is clearly necessary that the precise grounds for these should be known. We shall therefore, in the first place, proceed to give a brief abstract of the results of various cases, condensed from notes taken at the time, and shall then proceed to draw any conclusions from them which the data appear in our estimation to warrant.†

but also of their possible relation to other pathological conditions.

We are the rather inclined to such a course, seeing that almost any series of careful experiments on animals has not merely a direct bearing on the point immediately at issue, but ought at the same time to be capable of throwing numerous side lights on other subjects of physiological and pathological interest.

Classification of the experiments adopted.

In proceeding to give a detailed account of the result of individual experiments, some more or less systematic arrangement of them is essential. The experiments in question, in this instance, might be classified on various principles; but an arrangement having as its basis the fact of the purity or dilution of the medium employed, and sub-divided according to the age of the material, in other words according to the amount of decomposition which it has undergone, appears to be as natual and as convenient as any. Such an arrangement has accordingly been adopted in regard to the experiments of which we now proceed to give an account.

1.—EXPERIMENTS ON THE INJECTION OF PURE CHOLERAIC FLUIDS INTO THE VEINS OF ANIMALS.

(a). The choleraic material used being fresh.

Appearance of the choleraic material injected.

EXPERIMENT I.—A large healthy pariah dog was put under chloroform, and nearly an ounce of choleraic evacuation was injected into the right femoral vein. The material injected consisted, in greater part, of grey watery fluid, but contained in addition numerous minute fragments of the flocculi characteristic of choleraic evacuations. The operation was performed at 8 A. M.

Effects of injection.

The animal continued dull and sluggish throughout the course of the day, but did not show the slightest indication of pain. It neither was purged nor vomited, and on the following morning, 24 hours after the operation, it appeared to be much livelier than on the previous evening. The wound in the thigh, however, presented an unhealthy aspect, and there was a considerable amount of swelling around it. The animal became rapidly more depressed and dull during the day, and in the evening appeared to be in a dying condition; but throughout it showed not a single symptom which could be supposed to resemble those of cholera.

---

* We purpose, however, availing ourselves of an early opportunity of trying the effect of injecting various substances directly into the small intestines of animals, by taking out a loop of the gut, and introducing the selected substance by means of a finely-pointed syringe; thus overcoming this source of fallacy, at least as far as the direct action of the stomach is concerned.

† In order to economise the time of the reader, we have endeavoured to render the marginal notes a convenient epitome of the salient points of each experiment.

As it appeared probable that it would die during the night, and that the results of *post-mortem* examination would therefore be vitiated, it was anew put under chloroform at 5 P. M., 33 hours after the injection, and the administration continued until respiration ceased. An immediate *post-mortem* examination was then performed, the results of which were as follows:—

Post-mortem appearances; nothing special observed.

Absence of bacteria in the blood.

There was much erysipelatous inflammation of an unhealthy nature around the wound extending for some distance up the flank. On opening the abdomen, the peritoneal cavity was found to contain no fluid, and the peritoneum both in its visceral and parietal layers appeared to be perfectly healthy. The intestines were empty, and in every respect appeared to be perfectly healthy. The liver was extremely fatty and so soft and friable as to break under the slightest pressure. On its upper surface there was a radiating cicatrix which, from its appearance, seemed to indicate the site of an old rupture of the organ. The larger veins contained fluid blood, and there was no indication of the occurrence of embolism in any part of it. The kidneys were extremely fatty, and the left one contained one or two embolic masses of considerable size, projecting on the surface and extending deeply into its substance. The bladder was full of urine. The pleuræ, lungs, and heart were perfectly normal in aspect. The blood showed no traces of bacteria in it when carefully examined a quarter of an hour after its removal from the heart.

(*b.*) *The choleraic material used being* ONE *day old.*

Material injected twenty-four hours old.

EXPERIMENT II.—A dog which had been previously the subject of injections of choleraic media, both femorals and one basilic vein having been previously tied (*vide* Experiments VI., XXXVI. and XL.), but which was nevertheless in very fair condition, was put under chloroform at 7-30 A. M. The remaining basilic vein was now opened, and four drachms of a choleraic evacuation passed by a patient in hospital 24 hours previously, and which had remained in a bottle during the interval, was injected into it.

No visible result.

The animal rapidly recovered from the effects of the chloroform, and, saving that it limped slightly in walking, appeared to be in no way affected by the operation. It continued apparently in health throughout the day, walking about and feeding, and on the following morning also it showed no symptoms of illness. It was therefore killed under chloroform as in the previous experiment, and an immediate *post-mortem* examination performed.

Post-mortem — no special lesion.

There was a localized sac of pus in the sheath of the vessel last injected. The pus appeared to be perfectly normal and there was little inflammation around the sac. The wounds caused by the previous operations were clean and healthy, that in connection with the femoral vein of the opposite side being almost entirely healed up. The abdominal and thoracic organs were carefully examined, but save for the existence of one or two minute, congested, possibly embolic patches in the liver they appeared healthy and normal.

Material 24 hours old.

EXPERIMENT III.—A healthy young pariah dog was put under chloroform at 7 A. M., and four drachms of choleraic evacuation, which had stood for 24 hours in a bottle, was injected into the right femoral vein. The operation was performed on the same morning and with the same material as Experiment II.

The animal once or twice ceased to respire during the operation, but by resorting to artificial respiration, sensibility was restored, and it eventually recovered from the influence of the chloroform.

Effects of operation; severe illness but apparent recovery in a week.

Several days of illness supervened, during which the animal appeared hardly able to walk, became much emaciated, and was affected with slight convulsive twitchings. These symptoms gradually passed off, and at the close of a week after the performance of the operation, it appeared to have entirely recovered. It was accordingly killed on the morning of the eighth day, and an immediate *post-mortem* examination made.

Post-mortem: reddish fluid in peritoneum; intestines congested externally and containing pinkish mucus.

On opening the abdomen the peritoneal cavity was found to contain a considerable quantity of reddish serous fluid. The intestines were congested externally, and contained here and there patches of reddish mucus. The remaining abdominal and thoracic organs appeared to be perfectly healthy.

(*c.*)—*The choleraic material used being* TWO *days old.*

Material used being the supernatant fluid, 40 hours old.

EXPERIMENT IV.—A large, healthy, young pariah dog was put under chloroform, and about half an ounce of choleraic material was injected into the right femoral vein. The material employed consisted of the supernatant fluid of an evacuation, which had stood for 40 hours, and which had, when quite recent, been chiefly characterised by the profusion of large, active amœboid bodies present in it

No result.

The dog, rapidly, recovered from the influence of the chloroform, and appeared to be quite unaffected by the operation. On the following morning, 24 hours after the injection, there were no symptoms of illness, and during the subsequent three days the animal appeared to be in perfect health, so that, on the morning of the 4th day from the first operation, he was made the subject of another experiment (*vide* Exp. XXII).

The supernatant fluid used, 48 hours old.

EXPERIMENT V.—A very young and healthy pariah pup was put under chloroform, and two or three drachms of the supernatant fluid from a choleraic evacuation which had stood in the laboratory for 48 hours were injected into the right femoral vein.

No result.

The animal recovered rapidly and perfectly from the influence of the chloroform. It showed no symptoms of illness, and on the following day appeared to be quite well. As it continued in perfect health, it was subjected to a fresh operation 48 hours after the performance of the former one (*vide* Exp. XXXV).

Material used 48 hours old.

EXPERIMENT VI.—A healthy pariah dog, into the right femoral vein of which choleraic material had been injected three days previously without result, was put under chloroform, and four drachms of a dejection which had been passed 48 hours before by a patient who had been ill for 24 hours, was injected into the femoral vein of the opposite side.

No result.

The dog was never fully under the influence of the chloroform and very soon appeared as though nothing had happened to it On the following day it seemed to be quite well and remained so until after the lapse of three days, when it was again operated on (*vide* Experiment II).

(*d.*)—*The choleraic material used being* THREE *days old.*

Material used 72 hours old, swarming with bacteria and animalcules, obtained from a very mild case of cholera

EXPERIMENT VII.—A strong, healthy pariah dog was put under the influence of chloroform, and four drachms of choleraic fluid was injected into the left femoral vein. The fluid was derived from an evacuation which had been kept for 72 hours.* It was watery, and at the time of the operation had but a very slightly offensive odour, and a faint alkaline re-action. There was hardly any sediment present, and the material injected consisted entirely of liquid crowded with very large and active, stiff-looking bacteria, together with myriads of active flagellated monads.

No marked result: killed under chloroform 24 hours after operation.

The animal appeared to be very little affected by the operation, showed no symptoms of disease throughout the day, and by the following morning seemed to be quite well. Chloroform was accordingly again administered, and continued until death occurred 24 hours subsequent to the performance of the injection.

---

* The case from which it was derived was a very slight one, rather of choleraic diarrhœa than of cholera, and made a rapid recovery.

Post-mortem: no peritonitis; intestines healthy.

Mesenteric glands congested; contained no bacteria, nor did they develop in 24 hours.

A *post-mortem* examination was performed at once, the abdomen being opened before respiration and circulation had finally ceased. There were no signs of peritonitis present. The mucous surface of the intestines appeared to be quite healthy. Scrapings from it showed merely normal epithelial cells and villi with the usual sprinkling of minute bacteria. The mesenteric glands were congested and contained a good deal of fluid in their interior. A preparation of this fluid was mounted in a wax cell and examined one hour and a half afterwards. It was found to consist of a clear liquid, containing no recognisable bacteria or vibriones, but full of red blood-corpuscles and active amœboid bioplasts. It was again carefully examined 24 hours later, but the only change observable in it was that the bioplasts had all become motionless and circular. The rest of the abdomen and thoracic organs were apparently healthy.

No bacteria in the blood, nor were any developed.

Two preparations of blood from the heart were mounted as usual in wax cells. These were examined about an hour afterwards, and again after the lapse of 24 hours. On neither occasion did they show anything abnormal, the serum was perfectly clear and free from all traces of bacteria or vibriones, and an abundance of leucocytes crawled out of the clot and subsequently underwent their usual changes.

Material used, 72 hours old, same as in last experiment.

EXPERIMENT VIII.—Immediately after the injection of the previous experiment had been completed, another very large healthy pariah dog was put under the influence of chloroform, and six drachms of the same fluid was injected into the right femoral vein.

Death in 3 hours

The animal rapidly recovered from the influence of the chloroform, and did not at first appear to be much affected by the operation, being able to walk to the kennel with apparent ease. It rapidly, however, became much depressed, and died within three hours. A *post-mortem* examination was performed five hours after death.

Post-mortem. No peritonitis; small intestines pale externally, and the mucous surface coated with a pinkish substance, consisting chiefly of epithelium, which had become almost entirely detached.

Beneath which were numerous oscillatoria-like vibriones.

Post-mortem rigidity was strongly marked. On opening the abdomen there were found to be no signs of peritonitis. The small intestine was pale externally. On opening it, it was found to be coated with a thick soft substance of pink hue. This layer was quite loose and easily removed from the subjacent mucous membrane, and was found to be composed of detached epithelium. When it was washed off, the denuded surface of the membrane became visible, from which only a very little material could be scraped, consisting of imperfectly developed epithelial cells, and containing an abundance of very long, uniseptate or jointless vibriones, lying motionless or progressing in a serpentine fashion over the field, as represented in the woodcut (Fig. 1. page 18).

Exemption of ileo-cœcal portion of small intestine.

For about six inches immediately above the ileo-cœcal valve the gut appeared quite healthy and unaffected, but every where else the epithelial coating of the mucous membrane appeared to be detached.

Mesenteric glands crowded with oscillatoria-like vibriones.

The mesenteric glands were soft, and not congested, but of a dirty yellow colour on section, and containing an abundance of fluid. A preparation of this fluid was mounted in a wax cell and carefully examined an hour and a half afterwards. It was found to contain an abundance of gland-cells and to be swarming with elongated vibriones like those present in the intestines, for the most part uniseptate, and either still or only moving slightly. It was again examined sixteen hours subsequently, but no changes had taken place in the condition of the vibriones, although the majority of the gland-cells had broken down, and numerous clusters of fatty crystals had made their appearance.

The large intestine healthy.

The large intestine was normal in appearance, and the remaining abdominal organs were healthy. The stomach contained a little glairy fluid.

No pleurisy; slight congestion of pericardium.

On opening the thorax there was found to be no pleurisy. The lungs were collapsed, the left one totally so, whilst the right was partially congested. The pericardium contained a little fluid, and there was slight congestion of both the visceral and parietal layers. The heart was healthy.

No bacteria in the blood, but needle-shaped crystals rapidly formed.

A preparation of blood from the right ventricle was mounted in a wax cell and examined an hour afterwards. At that time nob acteria could be detected in it, but crystals had begun to appear, and the serum was stained with the colouring matter of the red-corpuscles, whilst sixteen hours afterwards the whole of the preparation was converted into a mass of large blood-crystals.

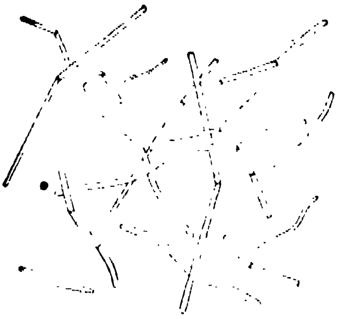


Fig. 1. ×500.
Oscillatoria-like vibriones obtained on the mucous surface of the small intestines and in the mesenteric glands.

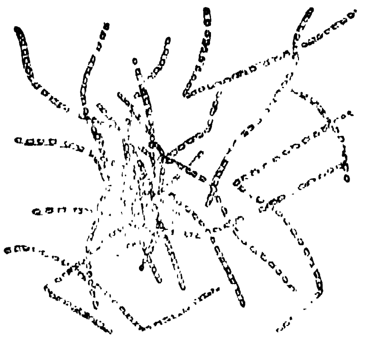


Fig. 2. ×500.
Appearances presented by the bodies in Fig. 1, on the third day.

Material used, same as last experiment, 72 hours old.

Experiment IX.—On the completion of the preceding operation, Experiment VIII, another very large pariah dog was put under the influence of chloroform, and one ounce of the fluid employed in it was injected into the right femoral vein.

Death in 4 hours.

The animal at first appeared to be very little affected, and like the dog of the preceding experiment, walked off to the kennel with ease and without manifesting any symptoms of pain or inconvenience. It died, however, within four hours, and a *post-mortem* examination was performed four hours after death.

Post-mortem: No peritonitis; paleness of intestines externally; creamy substance within consisting of detached epithelium.

Post-mortem rigidity was strongly marked. On opening the abdomen the small intestines were found to present precisely the same appearances, both externally and internally, as in the preceding case. There was the same separation of the epithelium, and the resulting formation of a soft, pink, creamy substance, and in this case also the portion of the gut immediately above the ileo-cæcal valve was apparently unaffected.

Watery fluid towards lower end of ileum just above unaffected portion of mucous membrane, near ileo-cæcal valve.

The only feature in which the intestines in this instance differed from the others consisted in there being a certain amount of watery fluid present in them. Towards the lower end of the ileum, just above the unaffected portion of the mucous membrane, the separation of the epithelium was not so far advanced as higher up, and appeared to be in a state of transition towards such a condition.

Mesenteric glands contained bacteria and long vibriones.

The mesenteric glands were highly congested internally, of a soft consistence, and contained an abundance of pink fluid. A preparation of this fluid was mounted as usual in a wax-cell. When examined an hour and a half subsequently, it was found to contain an abundance of minute bacteria, a sprinkling of the long vibriones occurring in the glands and intestines of the previous case, together with normal gland-cells and numerous red blood-corpuscles. Sixteen hours later, it contained an abundance of minute active bacteria together with molecular matter, fatty crystals and cells, but showed none of the elongated vibriones previously present in it.

Large intestine healthy.

The large intestine and appendix vermiformis were normal in aspect, and the rest of the abdominal viscera appeared healthy. The bladder contained a little urine.

Cancerous nodules throughout the lungs; slight pericarditis.

On opening the thorax there were found to be numerous large cancerous nodules throughout the substance of both lungs, which were collapsed, but contained a little air.

There was slight inflammation of the parietal pericardium, and the visceral layer also was somewhat injected.

Bacteria developed in the blood.

A preparation of blood was, as usual, procured from the right ventricle and mounted in a wax cell. When examined about two hours afterwards, the serum was found to be deeply stained with the colouring matter of the red corpuscles, and to contain numerous minute active particles, but no distinct bacteria could be detected in it. Sixteen hours afterwards it was crowded with large blood-crystals and contained an abundance of minute active bacteria.

Material used, same as in Experiments VII–IX., 80 hours old.

Death in about 6 hours.

EXPERIMENT X.—A small healthy pariah dog having been put under the influence of chloroform, about three drachms of the same fluid employed in the three preceding experiments, but which had now been kept for nearly eight hours longer, was injected into the right femoral vein. The injection was performed at 4 P. M., and the animal died during the night. A *post-mortem* examination was performed at 7 A. M. of the following day.

Post-mortem. Mucous membrane of small intestine covered with a soft pink coating of detached epithelium, except above ileo-cœcal valve.

Post-mortem rigidity was well marked. There was a little reddish serum in the peritoneal cavity, but the intestines and mesentery were not congested. On laying open the small intestine, the interior was found to present the usual appearances, the portion immediately above the ileo-cœcal valve being unaffected, and the rest of it covered with a soft pink coating of detached epithelium.

The pink material crowded with epithelial cells, and oscillatoria-like vibriones.

Preparations of this pink material as well as of matter scraped from the subjacent denuded mucous coat were examined. The former were found to consist of cylindrical epithelial cells, and to contain numerous long serpentine vibriones similar to those found in the intestines and glands of the dogs of the previous experiments. The latter preparations consisted of imperfectly developed epithelial cells, with an even greater abundance of the elongated vibriones (Fig. 1.) which ultimately resolved themselves into a network of leptothrix-filaments (Fig. 2).

Fluid in mesenteric glands contained long vibriones.

The mesenteric glands contained pinkish fluid, a preparation of which was mounted in a wax cell. When examined an hour afterwards, the gland cells were found to be considerably disintegrated whilst the fluid contained great numbers of the elongated serpentine vibriones, described in the previous preparations, in a state of full activity. The majority of them appeared to be uniseptate with a kind of hinge joint in the middle.

The rest of the abdominal organs were healthy.

There was a little reddish serum in the pericardium; the right side of the heart was full of fluid blood, and the left contained a little also.

A preparation of blood was as usual mounted in a wax cell, which was examined an hour and a half afterwards, and found to contain numerous minute molecules in active motion, but no distinct bacteria. Twenty-four hours afterwards it was crowded with large needle-shaped blood-crystals, and the serum had almost dried up.

Blood contained active molecules, but no bacteria.

(*d*.)—*The choleraic material used being* FOUR *days old.*

Material used as in Experiments VII–X, but 96 hours old.

No marked effect. Killed under chloroform 9 hours after operation.

EXPERIMENT XI.—A small healthy pariah dog was put under the influence of chloroform, and four drachms of the fluid employed in experiments VII, VIII, IX and X, but which had now been kept for 96 hours, was injected into the right femoral vein. The animal seemed to be very little affected by the operation, and ran off to the kennel very cheerfully a few minutes after it was completed. It remained in apparent health, and was killed under chloroform about 9 hours subsequently.

Post-mortem. Upper portion of small intestine coated with a sanguineous substance, but the epithelium was not detached.

During the administration of the chloroform, tarry liquid escaped from the rectum, and the large intestine was subsequently found to be full of similar material. The small intestine for nearly two feet above the ileo-cœcal valve appeared healthy, but above that the mucous membrane was coated with a sanguineous layer, the epithelium however was not detached. The mesenteric glands were very much congested and full of reddish fluid. Some of them were reserved in a moist chamber for 14 hours. On sections being made at the close of that period, the gland was found to contain fluid in its interior swarming with active bacteria, and containing a sprinkling of long, active, serpentine vibriones similar to those found in the preceding experiments with the same fluid. A preparation of the fluid from the glands was also mounted in a wax-cell at the *post-mortem* examination. On examination a quarter of an hour afterwards, it was found to be full of red blood-corpuscles and crowded with minute motionless molecules. Twenty-four hours later many of these particles were in active motion, but there were no elongated vibriones present. The rest of the abdominal and thoracic viscera were healthy, and there were no traces of pericarditis.

Mesenteric glands preserved for 4 hours, contained bacteria and long vibriones:

Bacteria also present in gland fluid, but no vibriones developed.

Two preparations of blood, one from the vena portæ, the other from the right ventricle were mounted in wax-cells as usual. They were examined a quarter of an hour afterwards; the latter contained numerous motionless molecules, the former a few small blood crystals, but in neither were there any distinct bacteria. They were again examined after an interval of 14 hours. At this time the preparation of portal blood contained numerous moving molecules, and an increased number of crystals, whilst the other preparation was apparently quite unchanged.

No bacteria in blood from heart or vena portæ, but moving molecules subsequently developed in the latter.

Experiment XII.—A young and healthy dog was put under chloroform, and four drachms of choleraic dejection which had been passed 96 hours previously, injected into the right basilic vein.

Material used 96 hours old.

The animal came rapidly out of the influence of the chloroform, but its respiration was disturbed, violent and gasping. Towards the evening of the same day it began to pass reddish, mucous evacuations, and it continued to do so until 5 A. M. of the following morning, when it died, 22 hours after the operation.

Death in 22 hours.

A *post-mortem* examination was performed at 7 A. M. On opening the abdomen, the cavity was found to be free from fluid and the peritoneum was smooth and shining, appearing in every respect to be perfectly healthy. The large intestine was throughout coated with a layer of thick, dark red mucus which ceased sharply close to the ileo-cæcal valve. The small intestines showed small patches of red mucus on the interior of the jejunum and ileum, whilst the duodenum appeared to be perfectly healthy.

Post-mortem appearances: Patches of red mucus in the small intestines.

The liver contained a few extravasated spots of small size, and one about the size of an almond beneath the peritoneum close to the gall-bladder. The spleen was pale and bloodless. The kidneys appeared to be perfectly healthy.

Small extravasations in the liver and

On opening the chest the pleural cavities were found free of fluid, and the membranes, like the peritoneum, appeared perfectly healthy. The left lung was universally mottled and congested It was gorged with blood, and exhibited numerous small spots of extravasation probably due to embolism, both superficially and throughout its substance. The right lung showed numerous blackish spots towards the base, but was not universally congested like the right one. The pericardium was healthy and contained no fluid. The surface of the heart, more especially of the left ventricle was covered with yellowish white miliary spots, and small points of extravasation. The cavities of the right side were extremely distended and full of soft, black clot. The left ventricle contained a little fluid blood.

in the lungs, which were also much congested; miliary spots on the surface of the heart.

Experiment XIII.—A healthy pup was put under chloroform, and three drachms of choleraic material injected into the left femoral vein. The material consisted of the fluid and sediment of an evacuation thoroughly shaken up, and was in an active state of decomposition, the fluid being covered with a thick layer of bacteria, and the sediment consisting in greater part of amorphous matter with

Material injected (fluid and sediment) 96 hours old.

a few persistent red blood corpuscles. The injection was performed at 9 A. M., and the dog rapidly came out of the influence of the chloroform. It died at midnight of the same day without having shown any choleraic symptoms.

Death in about 15 hours.

A *post-mortem* examination was performed at 8 A. M. of the following morning, 23 hours after the operation. The *post-mortem* rigidity was well marked.

Post-mortem appearances.

There was no evidence of inflammatory action around the wound in the thigh, which appeared clean and healthy. On opening the abdomen, the cavity was found to be free of fluid, the surface of the small intestines appeared slightly roughened, but the parietal peritoneum was perfectly smooth and glistening, and there was no evidence of inflammatory action present. The stomach was empty, and there were a few ecchymosed spots on the mucous membrane. The duodenum appeared healthy and contained a small quantity of bile-stained mucus. The mucous membrane was perfectly free of injection throughout the upper portion of the jejunum, but towards the lower extremity there was an ecchymosed patch three or four inches in length. The ileum contained an abundance of mucus of a peculiar reddish hue. The large intestine was also coated with abundant reddish mucus.

A few ecchymosed spots in jejunum and the ileum coated with reddish mucus.

Small nodules of disintegrated matter throughout the liver.

The liver both on the surface and throughout its substance showed numerous small, light coloured spots about the size of small shot. There were no inflammatory rings around them; after the specimen had been for 12 hours in a weak solution of spirit these spots, where on the surface, appeared slightly prominent; but these prominences disappeared on exposure to the air, and slight depressions replaced them, appearing to indicate that they had been due to an abnormal absorption of fluid at these points. On microscopic examination, the material composing these light coloured spots was found to consist of molecular matter and liver-cells in various stages of disintegration. The spleen was normal in appearance. The kidneys also appeared healthy.

The thoracic viscera healthy (?).

On opening the chest the pleuræ were found to be healthy. The trachea and bronchi were empty and normal. The lungs were collapsed, containing very little air. They appeared to be injected on the surface, contained a little black blood, and presented a somewhat pneumonic aspect. The smaller bronchial tubes contained a yellowish frothy fluid. The pericardium was healthy. The right auricle was distended with coagulum, part of which was black, part gelatinous and yellowish. The right ventricle was in a similar condition. The pulmonary artery was full of a similar coagulum. The left auricle contained a little dark clot and the left ventricle was strongly contracted and empty. The pulmonary veins were full but not distended with blood.

The material used (supernatant fluid) 96 hours old, crowded with bacteria and amœbæ. The dog had previously undergone two injections.

EXPERIMENT XIV.—A small dog into both of whose femoral veins aqueous solutions of choleraic material had been previously injected without the slightest result (*vide* Experiments XXXIV & XXXVIII), was put under chloroform, and two drachms of the supernatant fluid of a dejection which had been kept for 96 hours were injected into the right basilic vein.

The material injected contained innumerable monads, bacteria and vibriones, together with a few amœboid bodies about the size of white blood corpuscles. The operation was performed at 7-30 A. M., and the dog quickly recovered from the influence of the chloroform, was able to support himself at once and very shortly appeared as though nothing had happened to it. The animal continued in perfect health, eating and drinking freely and having certainly improved in condition during the period in which he had been subjected to operations involving the ligature of both femoral and one of the basilic veins.

No effect.

Previous to setting the dog at liberty, its blood was examined; neither monads nor bacteria discoverable.

Three days subsequent to the last operation, a specimen of blood was taken for microscopic observation and the dog was then let loose to return to his native wilds, and no doubt to regret the regular diet and attention which he received during his period of service to science. The blood was carefully examined but without yielding the slightest evidence of the presence of monads, bacteria or vibriones.

Material used (supernatant fluid), 96 hours old.

Death in 5 hours.

EXPERIMENT XV.—A large healthy young dog was put under chloroform, and about seven drachms of the supernatant fluid of an evacuation which had been kept for 96 hours injected into the right femoral vein. Five hours subsequent to the operation the dog died somewhat suddenly, having passed about a pint of liquid evacuation just before death.

Post-mortem appearances; abdominal cavity; reddish fluid in peritoneum;

much congestion of some portions of the small intestines, with reddish fluid contents; small clots in the substance of the liver.

A *post-mortem* examination was performed four hours after death. The body was still warm, and there was no *rigor mortis*. On opening the abdomen a little sanguineous fluid was found in the peritoneal cavity. The outer surface of the intestines was much congested and of a purple color. The stomach was healthy. The mucous surface of the duodenum was normal. The jejunum contained reddish-yellow frothy fluid, becoming pink towards the lower extremity; but there were no erosions of the mucous membrane. Towards the middle of the ileum the contents were of a sanguineous aspect and of fluid consistence, but they became paler towards the lower extremity. In the lower half of the ileum there were patches of extreme congestion corresponding, as a rule, with patches of *tricocephalus dispar*. Towards the ileo-cœcal valve the intestine appeared to be healthy. The large intestine exhibited a few ecchymosed spots, but was otherwise healthy in appearance. The liver was fatty and showed small clots penetrating its substance. The gall-bladder contained bile. The kidneys were slightly congested, but otherwise normal. The bladder contained about three ounces of clear urine.

Thoracic cavity; reddish fluid in pericardial and pleural cavities.

The pleural cavity contained a little slightly sanguineous fluid. The lungs were collapsed, containing very little air; but they were not congested. The pericardium contained about two ounces of fluid similar in appearance to that present in the peritoneal and pleural cavities. The right auricle and ventricle were full of dark colored clot.

Material used (supernatant fluid) 90 hours old: death in six hours.

EXPERIMENT XVI.—A healthy pariah dog was put under the influence of chloroform at 7 A. M., and half an ounce of the supernatant fluid of a choleraic evacuation* which had been kept for four days was injected into the right brachial vein. The fluid injected was peculiarly fœtid and was full of fine granular débris and bacteria. The animal rapidly recovered from the influence of the chloroform, but continued in a profoundly depressed condition until about 1 P.M., when he died. During the interval he neither vomited nor passed any stool.

Post-mortem appearances:

Extreme congestion and disorganisation of the mucous membrane of the small intestines.

A *post-mortem* examination was performed at 4-30 P.M., *Rigor mortis* was strongly marked. There was no fluid in the peritoneal cavity; but there was a certain amount of injection of the omentum and mesentery with a good deal of dark pigmentary deposit in the same localities. The intestines were very pale, externally almost white. Throughout the entire course of the small intestines from the pylorus to the ileo-cœcal valve, the mucous membrane was congested, softened, and apparently partially disorganised. It was coated with a thick layer of semifluid mucous material; and on this being wiped off, the surface beneath presented a brush-like aspect due to the injection of the villi. The material was, in some parts, yellowish white; but in general was of various shades of pink and resembled strawberry-cream in appearance.

This creamy fluid on microscopic examination was found to consist almost entirely of perfectly preserved cylindrical epithelium.

On microscopic examination, it was found to be composed almost entirely of cylindrical epithelium mixed with bacteria and amorphous particles. The large intestine also contained pinkish mucus, but the membrane was not injected save along the edges of the rugæ The stomach contained semidigested food, and was slightly congested. Towards its pyloric extremity there was a very hard fibroid tumour apparently of a schirrous nature. The liver appeared healthy; there were numerous *distomata* in the bile ducts.* There were no traces of embolism throughout its substance. The gall bladder contained bile. The spleen and kidneys were healthy. On opening the thorax, the pleural cavities were found to be free of fluid, and the membranes appeared to be perfectly healthy. The lungs were collapsed, airless, and containing very little blood. The pericardium was slightly injected. The right cavities were distended with fluid blood, and the left side also contained a little blood.

---

* This dejection was passed by a patient in the General Hospital. He was a sailor who had been in the harbour for only three days, and who had, previous to his seizure, never been over the side of the ship. The symptoms came on with extreme violence and suddenness, whilst he was in full health. The evacuations were *extremely* characteristic, and the term "rice-water" was peculiarly adapted to describe their appearance. That examined was passed two hours after seizure. On microscopic examination, the flocculi were found to consist entirely of brightly refractive cells, resembling those found in recent exudations, embedded in shreds of fibrinous material (so perfect was the resemblance that slides consisting of the flocculi and slides of quite recent flocculent exudation, removed from the surface of the liver, associated with peritonitis, when placed under separate microscopes could not be distinguished the one from the other); these cells in the course of a few hours broke down completely, whereupon the extraordinary resemblance which this dejection bore to rice-water disappeared.

Thoracic cavity; slight injection of pericardium.

Preparations of the blood were procured and, whether under common covering glasses, or in hermetically sealed wax-cells, were found to be swarming with very active bacteria after the lapse of 12 hours.

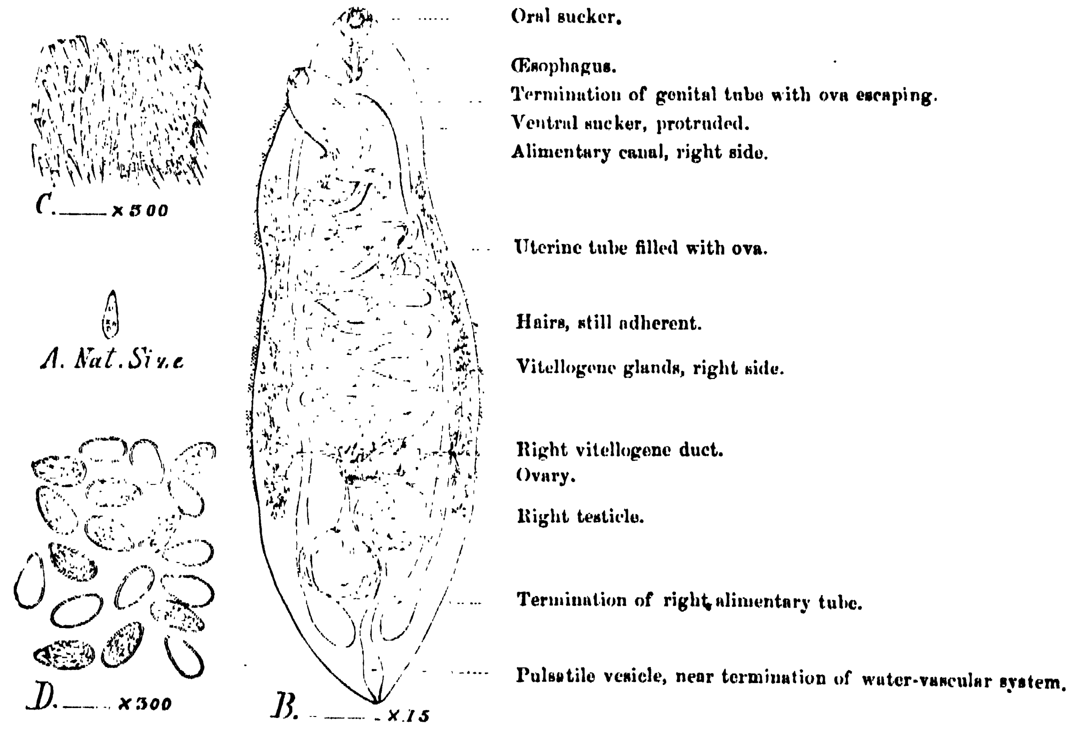
Blood swarming with bacteria in the course of 12 hours.

EXPERIMENT XVII.—A large healthy pariah dog was put under chloroform at 5 P. M. of the same day in which the preceding experiment was performed, and half an ounce of the same fluid employed in it injected into the right median vein. The operation was rapidly and successfully performed, and the animal quickly revived; but it appeared to be in a condition of profound collapse while under observation, and died during the course of the night, having passed some liquid mucous evacuations of a pink colour during the interval. The evacuations passed immediately after the operations were natural in colour and consistence.

Material used (supernatant fluid), 100 hours old: death in a few hours.

A *post-mortem* examination was performed at 7 A.M., 14 hours after the injection took place. *Rigor mortis* was strongly marked. Pinkish fluid† ran from the nose and

Post-mortem appearances.


Oral sucker.
Œsophagus.
Termination of genital tube with ova escaping.
Ventral sucker, protruded.
Alimentary canal, right side.
Uterine tube filled with ova.
Hairs, still adherent.
Vitellogene glands, right side.
Right vitellogene duct.
Ovary.
Right testicle.
Termination of right alimentary tube.
Pulsatile vesicle, near termination of water-vascular system.
C. x 500
A. Nat. Size
D. x 300
B. x 15

---

* Fig. 3, DISTOMA FOUND IN THE BILE DUCTS OF DOGS.

A.—The parasite figured natural size.
B.—Ditto magnified 15 diameters.
C.—Minute hairs covering the entire body when fresh and before being manipulated, magnified 300 diameters.
D.—Ova squeezed out of the uterine tube, magnified 300 diameters.

This Distoma is not infrequently met with in the bile ducts of dogs in this country. With the limited supply o literature on this subject within our reach we have, however, not been able to refer it to any described species, and hav therefore introduced a wood-cut showing its size, form and minute anatomy, together with those of the ova. It ap pears to us to be very closely allied to the species discovered by Dr. Cobbold in the liver of the American red fox an described and figured by him in his valuable work on Entozoa, indeed if, on re-examination it be found that that para site has been, inadvertently, drawn by Dr. Cobbold as seen from the back—a mistake into which, we ourselves fell, whe the first specimen was sketched—this may turn out to be identical with the species described by this Author under th name of *Distoma Conjunctum*. We strongly suspect this to be the case.

† The fluid consisted of mucus containing innumerable ova and a few perfect specimens, male and female, o *Pentastoma tænioides*.

Disorganisation of the mucous membrane of the small intestines.

mouth when the body was lifted. There was no evidence of peritonitis and the external surface of the intestines was very pale, as in the preceding case. The stomach contained a little pale pinkish mucus; but the membrane beneath was not congested. The duodenum contained more abundant and more highly colored semi-fluid mucous matter, and the mucous membrane throughout the rest of the small intestines was softened, and coated with similar material. There were also small spots of extravasation throughout. The large intestine was not affected.

Intense congestion of mesenteric glands.

Thoracic cavity. No active bacteria in blood when removed from the heart but numerous motionless particles and abundant active bacteria subsequently.

The mesenteric glands were all intensely congested and full of pinkish fluid closely resembling the intestinal material. The latter was found on microscopic examination to be composed of cylindrical epithelium mixed with abundance of bacteria and vibriones. The liver was variegated with light, yellowish, fatty spots. It contained no evidences of embolism. The kidneys and spleen were perfectly healthy. The bladder was empty. The pleural cavities were healthy; and the lungs were collapsed, pale and devoid of any traces of embolism. The pericardium was quite healthy. The right cavities of the heart were empty, and the left contained a little fluid blood. Preparations of blood were procured from the heart and from one of the systemic veins. These, when examined a quarter of an hour subsequently, showed no active bacteria, but a uniform sprinkling of minute motionless particles throughout the serum. Twenty-four hours subsequently the preparations were crowded with active bacteria.

Material used (supernatant fluid), 100 hours old, precisely as in the last experiment.

Experiment XVIII.—This experiment was performed at the same time and with the same material as the preceding one. A large healthy dog having been put under the influence of chloroform, four drachms of the fluid was injected into the right brachial vein.

Considerable loss of blood during the operation and extreme depression afterwards;

In consequence of a failure in the first attempt at injection and of the subsequent slipping of a ligature, the animal was both kept for some time under the chloroform, and moreover lost a considerable quantity of blood. The operation was at length, however, successfully performed. The dog seemed to be much depressed and whined as though in pain for some time.

but the dog recovered completely in a few days and was set at liberty.

During the night, however, he improved greatly and drank some water; and on the following morning he ate and drank greedily, and seemed to suffer more from stiffness of the wounded limb than from any constitutional symptoms. The wound looked clean and healthy, and the animal was bright and lively in appearance. He continued free from any constitutional symptoms, and five days after the operation was set at liberty in full health and excellent spirits.

Material used (supernatant fluid), 96 hours old.

Death in 3 hours.

Experiment XIX.—A pariah dog of average size put under the influence of chloroform at 7 A. M., and four drachms of the supernatant fluid of a choleraic evacuation which had been kept for 96 hours was injected into the right femoral vein. The dejection from which the material employed was derived, was passed by a patient in the General Hospital whilst in profound collapse, and consisted almost entirely of watery fluid, only a very little flocculent sediment being present These flocculi, when quite recent, showed mere flakes of minutely granular matter with a few hyaline cells and myriads of active infusoria. The material injected was entirely free from particles of sediment and consisted of an opalescent fluid swarming with active bacteria and containing a few molecular flakes and active ciliated infusoria. The operation was performed rapidly and with perfect success, and the dog quickly recovered from the influence of the chloroform. It passed a healthy evacuation soon after the close of the operation and showed no symptoms of pain, but extreme depression persisted, and it died about three hours after the operation, having neither vomited nor been purged during the interval.

Post-mortem appearances: pale and compact aspect of the intestines;

A *post-mortem* examination was performed within two hours after death with the following results. On opening the abdomen the peritoneal cavity was found to contain no fluid, the membranes showed no evidences of inflammatory action, and the

Congestion and disorganisation of the entire small intestine;

and the lumen of the gut filled with a thick creamy fluid composed almost entirely of cylindrical epithelium.

Congestion of mesenteric glands—the fluid in them contained bacteria.

exterior surface of the intestines was extremely pale. They were, in fact, of a whitish colour and were closely packed together. The stomach contained undigested food, and the mucous membrane was pinkish and evenly congested over the whole surface. The mucous membrane of the small intestines was congested from the pylorus to the ileo-cœcal valve; it was deep pink and moist; and the villi presented the brush-like aspect previously described in other experiments. The surface was coated with a thick layer of whitish, semi-fluid, flocculent matter, which in many cases completely choked the lumen of the gut on a cross section being made, and which on microscopic examination was found to be entirely composed of cylindrical epithelium, mingled with which were a few bacteria. The epithelial cells were in singularly perfect condition, and were either scattered or in sheets and masses. The large intestine was healthy in appearance. It contained normal fœcal matter and the mucous membrane showed no signs of congestion or other morbid change. The mesenteric glands were of a deep pink hue internally, and contained abundance of fluid of a similar colour. This fluid on microscopic examination was found to be crowded with the cells normally present in such glands, and to contain in addition a large number of active bacteria. The latter subsequently multiplied to a great extent in a preparation which was mounted in a wax-cell.

The liver was very soft in texture, but showed no evidences of the occurrence of embolism. The spleen and kidneys were healthy, and the bladder was full of urine, containing numerous cylindrical epithelial scales and active bacteria.

Thoracic viscera.

On opening the thorax the pleural cavities were found to contain no fluid, and the membranes were smooth and healthy. The lungs were pale and collapsed. There was no pericarditis. The right cavities of the heart contained dark fluid blood, and the left auricle and ventricle were empty.

Blood from the heart contained a sprinkling of bacteria, which rapidly increased in the wax-cells.

Two preparations of blood were mounted in wax-cells. When examined a few minutes afterwards, one of the specimens was found to contain a sprinkling of minute, active bacteria, whilst in the other only one or two could be detected. Twenty-four hours afterwards, the former specimen was crowded with large active bacteria which were often arranged in long series, and in ramifying flakes. The other preparation also showed a considerable increase in the numbers of bacteria present, although by no means so great as had previously been observed in other similar cases.

Material used (supernatant fluid), about 100 hours old.

EXPERIMENT XX.—A large healthy pariah dog was put under the influence of chloroform at 12 noon of the same day in which the previous operation was performed, and four drachms of the same fluid employed in it were injected into the right femoral vein. The operation was rapidly and successfully accomplished; there was no hæmorrhage, and the animal quickly recovered from the influence of the chloroform, and attempted to make its escape.

Appeared to be very ill at first, but nearly well on the following day.

Shortly afterwards, it became dull and depressed and continued in that condition throughout the rest of the day. At 7 A. M. of the following day it was still somewhat dull looking, but was sitting up and drinking water freely, and at 2 P. M. it appeared to have almost entirely recovered from the effects of the operation, and was made the subject of another experiment (No. LVI) from which it also recovered.

Material used (supernatant fluid), about 100 hours old.

EXPERIMENT XXI.—A pariah dog of average size was put under the influence of chloroform, immediately after the completion of the previous experiment, and four drachms of the same fluid employed in it was injected into the right femoral vein. The operation was rapidly and in every way successfully performed.

The respiration ceased whilst the wound was being stitched up, but was readily re-established, and the animal quickly recovered from the influence

Escaped on the second day apparently unaffected.

of the chloroform. It passed a normal evacuation soon after the operation was completed, and remained in a somewhat depressed condition throughout the rest of the day. On the following morning, however, it was much livelier, and 24 hours after the operation it appeared to be quite well and was very desirous of effecting its escape, which it succeeded in doing not long afterwards.

(*e.*)—*The choleraic matter used being* SIX *days old.*

Material used (supernatant fluid), 144 hours old.

No result.

EXPERIMENT XXII.—The dog which had previously been employed in Experiment IV was put under chloroform, and half an ounce of the supernatant fluid of the same dejection previously made use of in Experiment XV was injected into the left femoral vein. The dog appeared to be very little affected by the operation. Four days after he was in excellent health; but the wound in the thigh was still open.

No bacteria in the blood 4 days after the injection.

Several preparations of blood were made by opening a cutaneous vein, and either treated with osmic acid and acetate of potash, or without the use of any re-agent; but in neither series could any traces of bacteria be detected.

(*f.*)—*Choleraic material used being* EIGHT *days old.*

Material injected being the same as in Experiment XXII but two days older.

Death in 3 hours.

EXPERIMENT XXIII.—A strong young pariah dog was put under chloroform, and half an ounce of the fluid of the same evacuation employed in the preceding experiment, injected into the right femoral vein. Owing to the slipping of a ligature, the dog lost about a couple of ounces of blood during the operation. The hæmorrhage was, however, controlled, and the dog recovered from the influence of the chloroform, but died about three hours subsequently.

Post-mortem appearances;—Fluid in peritoneal cavity; intestines lined with a slimy pinkish material.

A *post-mortem* examination was made within six hours after death. The abdomen was considerably distended. There were two or three ounces of reddish fluid in the peritoneal cavity, and the intestines were pinkish externally. They were distended with air, and coated with a slimy, pale pinkish material, but contained very little fluid. The liver was pale, and there were already gaseous bubbles beneath the peritoneal coat.

There was no fluid either in the pleural or pericardial sacs. The lungs were collapsed. The right cavities of the heart were distended with black blood; those of the left side were empty.

(*g.*)—*Choleraic material used being* TEN *days old.*

Material injected 10 days old, crowded with bacteria and granular cells; death in 2½ hours.

EXPERIMENT XXIV.—A healthy, but very young pariah pup was put under chloroform, and about three drachms of the fluid of the same evacuation employed in the previous experiments, but which had now been kept for eleven days, was injected into the right femoral vein. The dog rapidly recovered from the chloroform; but there was some disturbance of the respiration, more especially immediately after the injection. The material injected was crowded with monads and bacteria, and contained numerous circular cells nearly the size of blood corpuscles and with granular contents.

Post-mortem appearances;—nothing special.

The dog died 2½ hours after the operation, and a *post-mortem* examination was performed six hours afterwards. *Rigor mortis* absent. The abdomen was distended, and the peritoneal cavity contained some reddish fluid. The intestines were distended with air, but contained no liquid. The mucous membrane was, in one or two spots, coated with pinkish mucus. The liver and spleen were healthy in aspect.

Blood, removed from the heart six hours after death, contained no distinct bacteria.

The lungs were collapsed, airless, and bloodless. Both sides of the heart were distended. Specimens of blood, both from the heart and from the *vena cava inferior*, showed no distinct traces of either monads or bacteria, although carefully examined for them.

(*h.*)—*Material used being* TWELVE *days old.*

Material injected 12 days old. Death in about 4 hours, apparently from 'shock.'

EXPERIMENT XXV.—A small pup was put under chloroform, and 2 drachms of the material used in the previous experiment were injected into the right femoral vein. Respiration ceased during the administration of the chloroform, but was re-established after it had been carried on artificially for a few minutes. Towards mid-day the dog died without having shown any choleraic symptoms, but having apparently never recovered from the *shock* of the injection.

Material used 12 days old, swarming with bacteria.

EXPERIMENT XXVI.—A healthy dog was put under chloroform, and nearly half an ounce of a choleraic evacuation which had been passed 12 days previously injected into the median basilic vein. The operation was performed with hardly any loss of blood, and the dog rapidly recovered from the influence of the chloroform.

The dog apparently well next day.

It did not appear to suffer from the operation, and on the following day appeared to be in perfect health. The fluid injected was swarming with bacteria and vibriones.

(*i.*)—*Choleraic material used being* FIFTEEN *days old.*

Material used same as in Experiment XVI to XVIII, but 15 days old.

EXPERIMENT XXVII.—A large healthy pariah dog was put under the influence of chloroform, and half an ounce of choleraic fluid was injected into the right femoral vein.

No effect whatever.

The fluid was the same as that employed in Experiment XVI, XVII, and XVIII, but had now been kept for 15 days. It retained its intensely fœtid odour, but its re-action was now faintly acid. The animal rapidly recovered from the influence of the chloroform, appeared totally unaffected by the operation, and remained in perfect health for the next three days, when it was made the subject of an experiment on the effects of section of intestinal nerves.

Material used same as in last experiment, 15 days old.

EXPERIMENT XXVIII.—A large healthy pariah dog having been put under the influence of chloroform, three drachms of the same fluid employed in the preceding operation which had just been performed, were injected into the left femoral vein.

No effect: animal killed under chloroform.

The dog appeared entirely unaffected by the operation, and remained quite healthy for the next three days, at the close of which period it was killed under the influence of chloroform.

Viscera healthy: the glands contained moving molecules, but no vibriones, even after 24 hours.

An immediate *post-mortem* examination was made, and the intestines, together with the other thoracic and abdominal viscera, were found to be perfectly healthy in appearance. Some of the mesenteric glands were reserved as in Experiment XI, and were examined after 24 hours. The fluid contained in the interior of them showed an abundance of moving molecular matter, but not a single specimen of the elongated vibriones occurring in the other reserved glands.

Material injected 15 days old.

EXPERIMENT XXIX.—A small pup, similar to those employed in Experiments XXIV and XXV, was put under chloroform, and one drachm of the evacuation employed in Experiment XX, &c., was injected into the right femoral vein. The operation was completed with perfect success and with no hæmorrhage or disturbance of the surrounding tissues. Shortly after the injection respiration ceased but was readily re-established.

Death in 4 hours.

After the completion of the operation the respiration was considerably disturbed. In the course of an hour or so, the animal began to whine and appeared to be in pain, moving about his limbs and turning on his back. He vomited three or four times and passed one evacuation. He died four hours after the operation, and a *post-mortem* examination was performed 2½ hours after death.

Post-mortem appearances: Intestines congested and lined with pinkish mucus.

Rigor mortis was strongly marked. The body was scarcely warm, and the wound was quite healthy. The peritoneal cavity contained no fluid, and the membrane was not injected. The intestines were distended, and, in greater part, of a purplish hue. They contained a pinkish slimy substance, which, as a rule, was most highly coloured opposite the most purplish portions of the intestine. The pinkish tint of the contents did not, in this instance, correspond with the presence of patches of worms, for the latter were in several instances observed to occupy pale portions of the intestine. The liver was healthy; the kidneys were congested.

Blood from the heart contained monads and bacteria.

The pleural cavities contained no fluid. The lungs were collapsed, airless and bloodless. Both sides of the heart were full of blood. The blood contained active monads and distinct bacteria.

(*j.*)—*Choleraic material used being* EIGHTEEN *days old.*

EXPERIMENT XXX.—A very young pup, similar to that employed in the previous experiment, was put under chloroform, and nearly one drachm of the same evacuation, which had now been kept for 18 days, was injected into the right femoral vein. The operation was performed without loss of blood; although respiration ceased, it was readily re-established, the restoration being apparently facilitated by holding the animal up by the heels. There were no symptoms of intestinal affection, but death supervened ten hours subsequent to the operation.

(*k.*)—*Choleraic material being* NINETEEN *days old.*

Injected material 19 days old; the dog well in two days.

EXPERIMENT XXXI.—A healthy dog of average size was put under the influence of chloroform, and four drachms of the same evacuation employed in the previous experiment were injected into the left femoral vein. There was no hæmorrhage, nor were the surrounding tissues disturbed. Towards the close of the operation the respiration became imperfect, but it never fairly ceased, and the animal quickly recovered from the effects of the chloroform. It did not appear to suffer from the operation, and in two days appeared to be in perfect health.

Injected material 19 days old: death in 5 hours.

EXPERIMENT XXXII.—A healthy pup was put under the influence of chloroform, and a few drachms of the supernatant fluid of an evacuation which had remained for 19 days in the laboratory was injected into the right femoral vein. There was hardly any hæmorrhage during the operation, and the dog rapidly recovered from the influence of the chloroform. It died five hours and a half afterwards, and a *post-mortem* examination was performed three hours after death.

Post-mortem appearances. Sanguineous fluid in small intestines.

Rigor mortis was well marked. The abdomen was slightly swollen and there was a little colourless fluid in the peritoneal cavity. The duodenum was of a pinkish hue internally and contained thick, pale, slimy matter. Further down, the contents of the intestines were watery and of a sanguineous hue. There was pink coloration throughout the jejunum and ileum, but both this and the fluidity of the contents diminished in the neighbourhood of the ileo-cæcal valve. The large intestine was normal in appearance. The liver contained numerous light coloured patches similar to those previously described in the *post-mortem* examination of Experiment XIII. It was not congested. The spleen and kidneys were normal.

The lungs were totally collapsed, airless, and bloodless. The *venæ cavæ*, right auricle, and right ventricle were full of dark and light coagula. The left cavities of the heart contained a little dark coagulum.

(*g*).—*Choleraic material used being* TWENTY-TWO *days old.*

Injected material 22 days old; the animal well in 3 days.

EXPERIMENT XXXIII.—A healthy dog was put under the influence of chloroform and half an ounce of the same choleraic dejection which was employed in Experiments XXIII, &c., and which had now been kept for 22 days was injected into the right femoral vein. The operation was performed with perfect success; the animal rapidly recovered from the influence of the chloroform, did not appear in any way to suffer from the injection, and three days subsequently was in a state of, seemingly, perfect health.

2.—INJECTIONS OF AQUEOUS SOLUTIONS OF CHOLERAIC MATERIAL INTO THE VEINS OF ANIMALS.

(a).—*The solutions being recently prepared.*

Equal parts of filtered choleraic dejection and water, recently prepared.

EXPERIMENT XXXIV.—A young pariah pup was put under the influence of chloroform at 8. A. M. and two drachms of a solution of choleraic material were injected into the right femoral vein. The solution had been prepared about half an hour before the operation, and consisted of equal measures of a perfectly fresh and filtered choleraic evacuation, and of water.

No result.

The animal rapidly recovered from the influence of the chloroform, and did not appear to be much affected by the operation. Before evening he was as lively as though nothing had happened to him, and was on the following morning made the subject of Experiment XXXVIII.

A recently diluted solution of choleraic material (96 hours old).

EXPERIMENT XXXV.—The pup which had two days previously been the subject of Experiment V, and which appeared to be in perfect health was put under chloroform, and two drachms of a freshly prepared solution of choleraic evacuation were injected into the left femoral vein. The solution consisted of the supernatant fluid and a little sediment of an evacuation which had been kept for about 96 hours in the laboratory. The animal rapidly recovered from the influence of the chloroform, was quite fresh and lively shortly afterwards and subsequently made its escape.

No result.

A recently diluted solution of choleraic material 14 days old.

EXPERIMENT XXXVI.—A healthy young pariah dog having been put under the influence of chloroform, half an ounce of an aqueous solution of choleraic material was injected into the right femoral vein. The solution was perfectly fresh, and the evacuation employed had been kept for fourteen days. During the course of the day the dog passed some watery reddish evacuations; but, on the following morning, appeared healthy and continued to do so until the third day, when he was made the subject of Experiment XL.

Passed reddish watery evacuations during the day; the following morning unaffected.

A recently diluted solution of choleraic material 25 days old.

EXPERIMENT XXXVII.—A healthy pariah pup was put under the influence of chloroform, and a freshly prepared solution of choleraic material injected into the right femoral vein. The evacuation employed was that which had afforded the materials for injection in Experiments XIII and XXXII, and had been kept for 25 days at the time the solution was prepared. The proportions of the water and choleraic fluid in the solution were 20 minims of the latter to one ounce of the former.

Results—Diarrhœa; rigors; death in 7½ hours.

The injection was successfully performed and the dog rapidly recovered from the influence of the chloroform; but the respiration continued to be hurried and somewhat irregular for nearly an hour. This symptom, however, passed off, and the dog appeared not very much affected. He refused all food, however, and began to suffer from diarrhœa, passing evacuations, the first of which were normal in aspect, while the subsequent ones became more and more mucous and blood-streaked. Four hours and a half after the operation, he was observed to suffer from rigors, and these continued to occur for the next three hours at the close of which period he died.

Post-mortem appearances.

A *post-mortem* examination was performed two and a half hours after death. *Rigor mortis* had not set in. The body was still slightly warm and the abdomen was not distended.

Small intestines filled with reddish fluid and extremely congested.

No distinct red corpuscles in the fluid, but amorphous particles and epithelial cells.

The parts around the wound in the thigh appeared quite healthy, and the vein above the ligature was normal in aspect and distended with fluid blood. On opening the abdomen the cavity was found to be free of fluid, and the peritoneum seemed to be quite healthy. The stomach contained glairy fluid mingled with bile. The interior of the small intestines was extremely congested, and the mucous membrane was of a deep pink colour from the duodenum to the ileo-cœcal valve. They were full of a red fluid mixed with grumous matter. This material when subjected to immediate microscopic examination showed no distinct traces of blood cells, but contained mere amorphous particles with some oil globules and a few epithelial cells. The large intestine was pale and almost empty. The liver was abnormally friable, and showed numerous yellow fatty spots scattered over the surface and extending into the substance. The gall-bladder was full but not distended. The spleen appeared healthy. The medullary portion of the kidneys was very red, while the cortical substance was of a pale yellow tint and fatty aspect.

Thoracic cavity.

On opening the thorax, no signs of pleurisy could be detected. The lungs were totally collapsed, airless, and almost bloodless. The pericardium was healthy, and contained no fluid. The right cavities of the heart were full of dark coagula and fluid blood. The left cavities were empty and the ventricle was strongly contracted.

(*b*).—*The solutions having been prepared* TWENTY-FOUR *hours previously.*

Solution prepared 24 hours previously.

No result.

EXPERIMENT XXXVIII.—The dog which had on the preceding day been made the subject of Experiment XXXIV without appearing in any way affected by it was again put under the influence of chloroform, and two drachms of the solution previously employed, but which was now in an active state of decomposition containing innumerable monads, bacteria and vibriones, were injected into the left femoral vein. The animal recovered quickly, as on the previous occasion, remained well afterwards and was subsequently the subject of Experiment XIV.

Solution prepared 24 hours previously: death in 4 hours.

EXPERIMENT XXXIX.—A young healthy dog was put under chloroform, and half an ounce of an aqueous solution of choleraic material injected into the right basilic vein. The solution had been prepared twenty-four hours previously, and was derived from the same evacuation as employed in Experiment XXX. The operation was successfully performed, and the dog rapidly recovered from the influence of the chloroform. Shortly afterwards well marked rigors occurred, and the animal died four hours subsequently having passed one liquid evacuation during the interval.

Post-mortem appearances: injection of small intestine.

A *post-mortem* examination was performed one hour and three quarters after death. The body was still warm, and *rigor mortis* just commencing. The peritoneal cavity contained no fluid and the membrane was healthy. The mucous coat of the intestines both large and small was injected almost universally, but the contents of the guts were of a yellowish-white tint, only here and there showing a pinkish tinge. In these coloured portions the consistence of the mucous matter of which they were composed was more fluid than elsewhere. Several tortuous patches of small vessels were visible on the surface of the liver; they were gorged with blood, but the hepatic cells in their neighbourhood appeared to be unaffected in any way when examined microscopically. The spleen and kidneys were healthy.

No monads nor bacteria in the blood, nor did they develop, during the next 2 days, when fungi appeared, the covering glasses having been cracked.

On opening the thorax the pleural cavities were found to be quite healthy. The lungs were collapsed, airless and bloodless, and several dark extravasated patches were present in each. The heart was healthy. The right cavities were full, and the left almost empty. Specimens of blood were obtained from each side of the heart, but no distinct traces of monads or bacteria could be detected in them at the time, nor were any observed to have developed in them two days subsequently, when filaments of fungi had crept into the preparations through cracks in the covers of the wax cells in which they were contained.

(*c.*)—*The solution having been prepared* FORTY-EIGHT *hours previously.*

Solution prepared 48 hours previously.

EXPERIMENT XL.—The dog employed in Experiment XXXVI, but which now appeared to be in perfect health, and with the wound in the right foreleg clean and healing, was again put under the influence of chloroform, and five drachms of the solution used in the preceding experiment, but which had now been kept for 48 hours, was injected into the left median vein. The fluid was thoroughly shaken up previous to injection, in spite of which the animal rapidly recovered from the influence of the chloroform, and began to run about as though nothing had happened. He continued in apparent good health during the next two days, and was then made the subject of Experiment VI.

No result.

3.—INJECTIONS OF ORGANIC SOLUTIONS, OTHER THAN OF CHOLERAIC NATURE, INTO THE VEINS OF ANIMALS.

Organic substances, not choleraic, injected into the veins.

The arrangement adopted in the preceding sections will be followed out in this also, so that comparisons between the various classes of experiments may be more readily made. The introductory remarks which have been made concerning them, apply equally to this, the conditions under which they were conducted being the same; the animals were taken indiscriminately, irrespective of sex, age or strength, the solutions for injection having usually been prepared before the animals had been seen.

The veins of the neck not suitable for these experiments.

It will be seen that the femoral and brachial veins have been selected in preference to the veins of the neck, owing to the complications which we had, in early attempts, frequently observed to have followed the occurrence of even slight cellulitis in that region.

(*a.*)—*The injecting material used whilst fresh.*

Material injected: fresh, diluted and filtered blood (fowl's).

EXPERIMENT XLI.—A small quantity of recently drawn fowl's blood was shaken up with about its equal weight of water, and filtered: half an ounce of this filtered mixture was then injected into the right femoral vein of a young dog four months old, whilst under the influence of chloroform.

No result.

In a short time the animal recovered from the effects of the anæsthetic, and soon partook of food. Slight lameness alone indicated that anything had occurred, and on the third day he appeared quite well, when he was subjected to a repetition of the experiment (*vide* Exp. XLIX). There were no traces of blood corpuscles in the filtered solution used for injecting.

Material injected: diluted but not filtered solution of fresh blood (fowl's).

EXPERIMENT XLII.—Some freshly-drawn fowl's blood was prepared, as in the foregoing, but not filtered, so that coagula and corpuscles were sucked up into the syringe, it having been ascertained that corpuscles, as well as coagula, were retained when an attempt was made to strain off the latter through tow. The nozzle was introduced as before into the femoral vein of a powerful dog, and three fluid drachms injected into it.

No result; no evidence of embolism detected at the post-mortem examination.

The dog after recovering from the chloroform did not appear to be much affected by the operation, and three days afterwards looked so well that he was again placed on the table in order to introduce some putrefying blood, but respiration suddenly stopped, and could not be re-established. The internal organs were perfectly healthy, not the slightest evidence of embolism being manifested.

Material injected: a strained solution of recently passed fœcal matter: the dog had three days previously been injected with putrefying solution of blood.

EXPERIMENT XLIII.—Three drachms of a watery solution of recently passed healthy fœcal matter, which had been five times filtered through muslin (so as to get rid of any large particles which might have been floating in the mixture) were injected into the left femoral vein of a dog, into whose right femoral vein some putrefying blood had been injected three days previously without any very marked result, although he was evidently far from well (*vide* Exp. LIII).

No result: animal escaped.

The dog quickly recovered from the effects of the chloroform, took to his food readily, and by the third day was so far improved as to have managed to make his escape.

Material injected: fresh peritonitic fluid.

EXPERIMENT XLIV.—Half an ounce of perfectly fresh sanguineous peritonitic fluid was injected into the right femoral vein of a large, healthy pariah dog which had been previously placed under chloroform. The fluid had been obtained from the peritoneum of a dog in whom peritonitis had been produced by the introduction of a solution of normal evacuation into the abdominal cavity (*vide* Exp. LXXIV).

Recovery in 3 days.

Post-mortem examination: every organ healthy.

The animal continued somewhat dull and sluggish throughout the day: the following day it was more lively, but a large inflamed swelling had appeared around the seat of the incision. On the fourth day it was very much improved and seemed to have nearly recovered. On the fifth day it was again put under chloroform, which was pushed until respiration ceased. A *post-mortem* examination was immediately made, but not the slightest sign of peritonitis nor of embolism could be traced, the only lesion observed being the inflammatory condition of the wound in the thigh. The bladder was full of urine, and the mucous membrane of the intestines perfectly healthy.

(*b.*) *The organic solution injected being* ONE *day old.*

Material injected, diluted ordinary fœcal matter 24 hours old: death in 3 hours.

EXPERIMENT XLV.—A healthy young puppy was put under chloroform at 8 A.M., and three drachms of a fluid composed of mixture of water, and healthy fœcal matter which had been prepared twenty-four hours previously, were injected into the right femoral vein. The dog recovered perfectly from the effects of the anæsthetic, but died at 11 A.M. of the same day, three hours after the operation, having passed several mucous stools in the interval, although the first stool passed after the operation presented no such appearance.

Post-mortem examination.

A *post-mortem* examination was made at 4 P. M. of the same day, and we found that the peritoneal cavity contained reddish serous fluid. The peritoneum was not injected, and there were no signs of inflammation of the membrane. The stomach was empty, containing only about an ounce of glairy fluid, its mucous coat healthy. The duodenum was deeply congested and contained thick yellowish mucus.

Marked congestion of intestines, with fluid resembling that found in cholera.

The congested surface, when wiped, resembled the hairs of a hair pencil when flattened out. In the jejunum the fluid was more watery and closely resembled that found in the intestines in cholera cases. In the lower part of the ileum there was less congestion of the mucous membrane, the contents here were fœcal and not fluid, and towards the ileo-coecal valve the surface was quite pale. The large intestine was pink and contained pinkish mucus.

No other special change.

There was a yellow patch at the edge of one of the lobes of the liver in which the minute vessels of the part presented a prominent tortuous appearance, evidently due to small local congestions. The spleen was large and showed numerous soft milky nodules on section. The kidneys were normal, not congested. The lungs healthy, collapsed and scarcely crepitant; the right cavities of the heart were full, the left empty.

Materials used: a strained solution of ordinary fœcal matter, 24 hours old.

EXPERIMENT XLVI.—A little ordinary fœcal matter was diluted with about twice its weight of water, allowed to stand for twenty hours, and afterwards twice strained through three layers of muslin. The solution was then injected into the left femoral vein of a young dog whilst under the influence of chloroform. During the operation, the respiratory movements suddenly ceased, but were re-established after artificial respiration had been persevered in for nearly ten minutes.

Death in 29 hours after passing pinkish stools.

The animal seemed to be quite comfortable during the day, but at night he became sluggish, passed reddish, liquid stools, and died on the following day, twenty-nine hours after the operation.

Post-mortem appearances: prune-juice like exudation in intestines, and pneumonic patches in the lungs.

The body was examined an hour and a half after death. There were no signs of peritonitis. The stomach was empty, the duodenum contained yellowish, bile-stained, fluid, and both small and large intestines contained a considerable amount of a grumous substance of the consistency and colour of black-currant jam or prune-juice, evidently due to altered blood exudation. The liver was extremely fatty. Kidneys and spleen normal. The heart was healthy, the cavities on both sides empty. There were numerous pneumonic patches interspersed throughout the lungs, but no indication of further mischief.

Material injected; a solution of ordinary fœcal matter, 24 hours old: no result.

EXPERIMENT XLVII.—The dog used in Experiment LIX having quite recovered was put under chloroform again, and six drachms of a solution of normal evacuation, prepared 24 hours previously, were injected into the left femoral vein. The animal did not seem to be the least affected by this operation neither until the next day, when it became sickly, and still more so on the second day, when chloroform was again administered, and a *post-mortem* examination at once made.

All the viscera healthy.

There was no fluid in the peritoneum, nor the least trace of peritonitis; the intestinal mucous membrane appeared to be perfectly healthy and pale, so were the mesenteric glands, and all the other abdominal and thoracic organs.

The blood contained bacteria.

A wax-cell preparation of the blood from the vena cava was made, and examined the next morning, when a scanty sprinkling of active bacteria were seen to be present; and on the third day the preparation was crowded with stiff short bacteroid bodies, perfectly still and resembling crystals.

Material injected; solution of ordinary alvine discharge, 34 hours old; no effect.

EXPERIMENT XLVIII.—A very powerful pariah dog was put under chloroform, and six drachms of fluid which had been employed in the preceding experiment, ten hours previously, were injected into the right femoral vein. The animal quickly recovered, and was under observation for three days, but not the slightest indications of functional disturbance were manifested, and it was subjected to another operation (*vide* Experiment LXII).

(*c.*)—*The organic material injected being* TWO *days old.*

Materials used: decomposing solution of blood 48 hours old, filtered.

EXPERIMENT XLIX.—A small quantity of the solution of blood which had remained over since its employment in Experiment XLII of this series, and which was found to be in an advanced state of decomposition, swarming with bacteria, was filtered as before, so that all solid particles together with the bacteria were got rid of, and afterwards injected into a branch of the left femoral vein of the same dog, into whose right femoral vein the fresh filtered solution had previously been injected, without ill effects (*vide* Experiment XLI.)

No effect whatever.

The animal was under observation for four days, was in no way affected, eating freely any food that was placed before him.

Material used; a solution of ordinary fœcal matter 48 hours old: death, almost immediate.

EXPERIMENT L.—Four drachms of a decomposing solution of ordinary fœcal matter were injected into the right femoral vein of a medium-sized dog. No blood was lost; and, but very little chloroform used, still the animal almost immediately after the operation began to breathe in an intermittent manner, gasped several times and died.

Cause of death could not be ascertained; bacteria in the blood of both sides of the heart.

The body was examined immediately, in order to ascertain whether the bacteria which the solution contained, had passed through the lungs into the left side of the heart. Specimens of blood were, therefore, carefully removed from the right and from the left cavities, and on microscopic examination, we found numerous very energetic bacteria in all the specimens. The preparations of blood from the right side of the heart appeared to contain more bacteria than those from the left. All the organs were healthy, no indications existing of the cause of the sudden death.

Injection of a solution of ordinary fœcal matter, 48 hours old.

Experiment LI.—A large healthy pariah dog was put under chloroform as usual, and six drachms of the solution of ordinary alvine discharge used in Experiment XLVII, but now forty-eight hours old, were injected into the left femoral vein. The ligature commanding the lower end of the vein unfortunately slipped, and considerable hæmorrhage ensued. It was, however, ultimately secured, and when the animal awoke it ran away.

Death in about 20 hours. Disorganisation of mucous membrane of small intestine.

Having been re-caught, it was kept under observation during the day, but nothing special was noted. During the night, however, the animal died and a *post-mortem* examination was made next morning. The intestines were filled with a soft pinkish substance, consisting chiefly of epithelium, and the mucous surface of the small intestine generally was much disorganised. The other abdominal and thoracic organs were healthy.

Material injected same as in Experiment LI; 96 hours old, swarming with bacteria. Death from shock in a few minutes.

Experiment LII.—Immediately on completion of the preceding experiment, another huge pariah dog was put under chloroform, and six drachms of the same decomposing fluid, swarming with bacteria, injected into its right femoral vein. The animal ceased to respire almost immediately, and efforts to restore it were in vain, although it had nearly come from under the influence of the anæsthetic, and none had been administered for some time.

Post-mortem appearances.

The viscera were forthwith exposed; the right side of the heart was enormously distended, and the left contained a little blood. The mesenteric glands were pink and contained red blood-corpuscles. The liver was of a very dark colour and gorged with blood; other viscera healthy.

Bacteria developed in preparations of blood from all parts of the circulation,

Three wax-cell preparations of the blood were made; one from the right side of the heart, another from the left side, and a third from the *left* femoral. Of these, in the first only could active bacteria be distinguished when examined immediately after the specimens were prepared; nor did any appear in the other two for some hours; next morning, however, all three contained an abundance of moving bacteria.

And in the juice of axillary and mesenteric glands.

Two wax-cell preparations were also made of the fluid squeezed out of an axillary, and out of a mesenteric gland, both of which contained numerous active bacteria, and monads from the first, and their numbers increased greatly during the following twenty-four hours. In about four days the activity of the monads and bacteria ceased, motionless molecules alone remaining in the blood, as well as in the gland-juice preparations.

(*d.*)—*The organic material injected being* THREE *days old.*

Material used; two drachms of putrid blood-solution, 72 hours old; crowded with vibriones.

Experiment LIII.—In order to complete the series of filtered and unfiltered, fresh, and decomposed solutions of a simple organic liquid, two drachms of the decomposed watery solution of fowl's blood, which had been used in previous experiments, and had, by this time, acquired an intensely putrid odour, and swarmed with active bacteria, were injected, without previous filtration, into the right femoral vein.

Owing to various accidents the dog had to be kept under the influence of chloroform for a considerable time. Its respiration twice entirely ceased, and was, on each occasion, restored by mechanical means. At the close of the operation the abdomen was extremely distended.

No effect.

In spite of these adverse circumstances, the animal on the second day was quite lively, and partook of its food freely, although the wound did not present a healthy appearance; but on the fifth day it was so far recovered as to be considered fit to undergo another operation, from which he also recovered and eventually escaped (*vide* Experiment XLIII).

Material used; a solution of ordinary fœcal matter, 72 hours old: death almost immediate.

EXPERIMENT LIV.—Half an ounce of the watery solution of ordinary fœcal matter which had been used in Experiment L and which now emitted an extremely fœtid odour, was injected into the femoral vein of a small young dog, but within a few minutes after the operation, although he appeared to be getting out of the influence of the chloroform, his breathing altered and was carried on by gasps. An attempt was made to draw off blood from the opposite femoral vein; but the circulation had stopped.

Post-mortem appearances; nothing special; bacteria in the blood of the right side of heart but none in axillary vein.

The viscera were at once exposed, but nothing distinctly abnormal observed. The venous system was intensely gorged with blood and both sides of the heart were distended. In the blood abstracted from the cavities of the right side, monads and bacteria were detected, but in blood removed from the axillary vein no positive evidence could be obtained of the presence of bacteria; the injected fluid would of course have had to pass through the capillaries of the lungs and of the systemic circulation before reaching the axillary vein.

Material used; solution of ordinary fœcal matter about 72 hours old: the animal already twice injected.

EXPERIMENT LV.—A small pariah dog into whose femoral veins two different specimens of decomposing choleraic dejecta had already been injected without producing any marked result, was again placed under chloroform and half an ounce of the decomposing solution of ordinary fœcal matter (exactly as used in the last experiment (LIV), both experiments being performed on the same day) was injected into the median basilic vein.

No result; killed under chloroform after a week.

After the operation, it is noted, "the dog appears as if nothing had happened." He was kept under observation for a week, when, in order to ascertain what changes all these putrifying matters might have produced, he was again placed under chloroform, and allowed to breathe it till respiration ceased. The wounds over two of the three veins which had been tied were completely healed. There was no peritonitis, the intestines were pale and perfectly healthy, so were all the viscera except the lungs and spleen. In the former, on both sides, large patches of hepatized tissue were found evidently due to pneumonia, and, enclosed by this altered tissue, at one spot was a small cavity filled with a dark thickish fluid. In the spleen there was, near the surface of one end, a small extravasated pouch about the size of a hazel-nut.

Hepatized tissue in both lungs; a cavity in one; extravasated spot in the spleen. No bacteria in the blood.

The blood was carefully examined for monads and bacteria, but none could be found.

Material used; solution of alvine discharge, 72 hours old: no effect.

EXPERIMENT LVI.—Half an ounce of a decomposing solution of ordinary alvine discharge, 72 hours old, the same as used in Experiment XLVII, &c., was injected into the right femoral vein of a dog, previously brought under the influence of chloroform. Not a drop of blood was lost during the operation.

There were not the slightest manifestations of illness during the three days the animal was kept under observation, and when the viscera were examined after it had been killed under chloroform, they were all found to be perfectly healthy.

Bacteria not developed in the blood, nor in the glands.

A wax-cell preparation of the blood was kept under observation for three days, but no bacteria nor any other organisms developed. A similar preparation was made by squeezing some fluid out of a mesenteric gland; here also no monads or bacteria could be detected during the period above named.

Material injected, solution of ordinary alvine discharge, 72 hours old. Animal previously experimented upon: no effect.

Experiment LVII.—The subject of Experiment XX, a large pariah dog, into whose right femoral vein decomposing choleraic fluid had been introduced five days previously without producing serious illness, was put again under the influence of chloroform, and six drachms of a solution of normal fœcal matter injected into the other femoral vein. Neither was the animal much affected by this, and four days afterwards appeared to be in perfect health, when it was killed under chloroform and immediately examined.

No bacteria developed in the blood, but they did in the gland-fluid as well as long vibriones.

The thoracic and abdominal viscera were normal, and the mucous coat of the intestines quite unaffected. A wax-cell preparation of blood from the heart appeared to be a perfectly healthy sample; there were no bacteria visible, nor were any developed during the following two days. A similar preparation was made of the fluid in the mesenteric glands (which was very abundant); on the first day no distinct bacteria were visible, but on the following morning the preparation was crowded with very active large bacteria, together with long, active, and still oscillatoria-like vibriones, such as are depicted in fig. 1. page 163; on the third day these organisms were all motionless and degenerated into a beaded leptothrix network (fig. 2, page 163).

(e)—*The injected material being* FOUR *days old.*

Material used, healthy alvine solution, 96 hours old.

Experiment LVIII.—A large healthy pariah dog was brought under the influence of chloroform, and four drachms of a solution of healthy alvine discharge, which had been prepared 96 hours previously, were injected into its right femoral vein. The dog rapidly recovered, and seemed to be but little affected.

Mucous dejections mixed with cholera-like flocculi.

Presently, it appeared to become drowsy, and in the course of half an hour symptoms of great irritation of the bowels were manifested. The animal was evidently much griped, and passed several mucous stools mixed with blood. This it continued to do during the day, numerous gelatinous flocculi also being mixed with the dejections. The flocculi when subjected to microscopic examination consisted of exudation cells (similar to those occurring in the flocculi of cholera dejecta), together with a few epithelial cells and structureless gelatinous material.

Death in 13½ hours. Pink coating to the mucous membrane of small intestine, beneath which the epithelium was unaffected.

Thirteen hours after the operation the dog died, and a *post-mortem* examination was made immediately. No fluid in peritoneum, no evidence of peritonitis; mesenteric glands much enlarged: dark pink internally and containing fluid of a similar colour. The small intestines were very pale externally, whereas the mucous surface was of a dark pink colour, being coated with a reddish mucous substance, which on removal showed the epithelial coat unaffected, and the mucous membrane not congested. No further evidence of morbid change could be discovered.

Material injected, alvine solution, 96 hours old: no effect.

Experiment LIX.—Four drachms of the alvine solution, 96 hours old, as used in the last experiment, were injected into the right femoral vein of a moderate sized dog under chloroform. The dog continued to be very active for some time, and attempted to make its escape, and was evidently by no means so much affected as the previous animal. By the next day it appeared to be quite well, and some more decomposing material was introduced into its circulation without producing any effect (*vide* Exp. XLVII).

Material injected, normal alvine solution, 96 hours old: no effect.

Experiment LX.—A large healthy dog placed under chloroform, and four drachms of the solution used in the two previous experiments were introduced into the right femoral vein. There was no loss of blood. It continued drowsy for a considerable time, but recovered during the course of the day, and by the fifth day was so far recovered as to seem fit to undergo another operation (*vide* Exp. LXIII).

Material injected, normal alvine solution, 96 hours old: death in a few hours.

Experiment LXI.—A small healthy pariah dog was put under chloroform, and five drachms of the solution of ordinary fœcal matter used in Exp. LVII, &c., now 96 hours old, were injected into the right femoral vein very successfully. The animal died within a few hours, and a *post-mortem* examination was made.

There was slight injection of the diaphragmatic pleura close to the pericardium, otherwise there were no indications of disease. The intestines were perfectly healthy.

Bacteria did not develop in the blood, but did in the gland-fluid.

Wax-cell preparations of blood from the heart and of fluid from the mesenteric glands were under observation for four days. The blood specimen continued perfectly free from all moving particles whatever, and contained no distinct motionless bacteria; whereas the gland-juice preparation was swarming with bacteria on the second day.

Material injected, ordinary alvine solution, 96 hours old: no result.

Experiment LXII.—As the dog used in Experiment XLVIII appeared to be vigorous and in excellent health, he was again put under chloroform, and six drachms of the same fluid as was used on the previous occasion, but now farther advanced in decomposition, being 96 hours old, were injected into the left femoral vein; on the third day he appeared to be perfectly well again, and when examined after being killed under chloroform, all the organs, including the intestines, appeared to be in a healthy condition.

No bacteria developed in blood or gland-fluid preparations.

A wax-cell preparation of the blood and another of fluid derived from the mesenteric glands were kept under observation for three days, but no moving bodies of any kind, monads or bacteria, were seen from first to last.

Material used 96 hours old: no result.

Experiment LXIII.—The powerful dog used in Experiment LX looked so well on the following day, as to be considered fit to undergo another operation, consequently having been brought under the influence of chloroform, six drachms of the solution of fœcal matter used in Experiment LVII, now 96 hours old, were injected into the remaining femoral vein.

The animal very quickly recovered from this also, and on the third day was killed in order to note the condition of the viscera. No lesion whatever could be found.

No bacteria developed in blood or gland preparations.

A drop of blood was carefully removed from the right external iliac vein and placed in a wax-cell, and a drop of fluid from the interior of a mesenteric gland was similarly enclosed for observation. During the three days that they were thus watched, not a single distinct monad nor bacterium was seen in either of the specimens.

Material used, a solution of ordinary alvine discharge, 100 hours old: no effect.

Experiment LXIV.—A large pariah dog was placed under chloroform, and an ounce of the same solution as used in Experiment LVIII, &c., a hundred hours old, was injected into the right femoral vein. It continued drowsy for some time, vomited a large quantity of bilious matter, and by the next day was tolerably well. The wound, however, had assumed an unhealthy, sloughy appearance, so the animal was killed forthwith. There was no peritonitis, the intestines were normal in every way, so were all the other viscera, thoracic and abdominal. The bladder was full.

No bacteria developed in the blood.

A wax-cell preparation of a drop of blood removed from the external iliac vein of the unwounded side, and a similar preparation of fluid pressed out of a mesenteric gland, were kept under observation for three days, during which period neither monads nor bacteria were seen in the former, but an abundance of white cells, whereas in the latter a few bacteria eventually appeared.

Material used same as in last experiment: death in 2½ hours.

EXPERIMENT LXV.—A large healthy pariah dog was placed under chloroform, and five drachms of precisely the same fluid as used in the last experiment were injected into its left femoral vein. After the operation it seemed to be much depressed, and vomited several times. The animal continued in this condition for two-and-a-half hours, when it died.

Congestion of villi and detachment of epithelium.

A *post-mortem* examination was immediately made, and it was found that the small intestines, though very pale externally, were internally deeply congested, and the lumen of the gut choked with a semi-fluid slimy substance, consisting chiefly of detached epithelium, the individual cells being in a perfect state of preservation. Beneath this substance the villi were seen to be deeply congested, presenting a brush-like appearance. The stomach was healthy, and so was the large intestine. The mesenteric glands looked healthy, and so did the remainder of the abdominal viscera. There was no peritonitis nor pleuritis, but there seemed to be some slight pericarditis. The lungs were collapsed and pale, and both sides of the heart contained fluid blood.

(*f*.)—*The injected material being* FIVE *days old.*

Material used, solution of fœcal matter 120 hours old: no effect.

EXPERIMENT LXVI.—A powerful pariah dog was placed under chloroform and half-a-ounce of the decomposing solution of fœcal matter used in Experiment LIV, &c., was injected into the right median-basilic vein. During the operation the animal on two occasions ceased to breathe, but was each time speedily brought round by artificial respiration.

On the following day the dog appeared to be perfectly well, and made his escape.

(*g*.)—*The injecting material being* SEVEN *days old.*

EXPERIMENT LXVII.—The dog referred to in the last experiment was caught towards the evening of the day on which he made his escape, and on the following morning placed under chloroform, when six drachms of the same fluid as had already been introduced into its circulation, but now two days older, which had since remained in an uncorked bottle, and was swarming with bacteria and vibriones, were injected into the other median-basilic vein.

During the four succeeding days the animal was closely watched, but he appeared to have been in no way affected.

Post-mortem: all organs healthy. No bacteria in the blood, nor did any develop in a week.

Having been killed under chloroform, the viscera were carefully examined, but no lesion detected any where, nor were there any signs of deposit in the lungs, liver or other organs. Three preparations of blood were obtained from a thoracic vein, and examined immediately, but not a single bacterium could be detected, nor were there any developed in the cells although under observation for a week.

B.—Experiments on the Introduction of Choleraic and of other Organic solutions into the Peritoneal cavity of animals.

Reasons for undertaking the series of experiments recorded in this section.

When the series of experiments on the effects of the introduction of solutions of alvine discharges directly into the circulation, as recorded in the previous pages, had been carried on for some time, we debated whether we should at once proceed to repeat similar experiments with solutions of various other organic and of inorganic substances, of acid, alkaline or neutral re-actions, or whether we should continue to use the same infecting medium, varying the mode by which its introduction into the system was effected.

Having satisfied ourselves that putrifying matter introduced directly in the blood, did very frequently exert as direct an action on the mucous membrane of the small intestine, as for example, mercury exerts on the mucous lining of the mouth and on the salivary glands, or as atropia and calabar bean exert on the iris, we yet felt convinced that the physiological phenomena evoked, and the pathological changes induced, were not those of cholera, although appearing to present a certain though, distant, relation to them.

Although, some remedial agents act in pretty much the same way, no matter how introduced into the system, whether by the mouth, lungs or through the skin, such as mercury and turpentine, the former increasing the salivary secretion, and the latter the urinary; still, their actions are to some extent modified by the mode of administration. We were, therefore, anxious, in the first place, to ascertain whether the introduction of precisely the same media, through some other channel, would modify their action on the system, in such a way as to bring the results to approximate more closely to the features presented in cholera, and in the second, whether the effects produced by one kind of alvine discharge could, in any way, be distinguished from those of another.

With these ends in view we conducted the following series of experiments on the effects of the introduction of organic fluids into the peritoneal cavity.*

An ounce of choleraic material, about 100 hours old, injected into the abdominal cavity of a dog.

EXPERIMENT LXVIII.—A large, healthy pariah dog was put under the influence of chloroform at 8-30 A. M., and one ounce of choleraic evacuation in a state of decomposition (having been kept for 96 hours) was injected into the peritoneal cavity. Previous to injection a preparation of the blood was mounted in a wax-cell; shortly after the operation the animal was observed to suffer from well marked rigors which recurred at intervals throughout the course of the day.

Result: extreme depression, but no evidence of pain, nor of cramps.

It remained in a state of extreme depression, lying in a semi-drowsy condition and neither whining, nor showing any other symptom of pain or uneasiness. A close watch was kept on the symptoms throughout the whole day, but nothing new presented itself; there was no passage of urine, nor of dejecta, and the only change observed was a gradual increase in the depression and drowsiness. Towards evening the animal appeared to be rapidly becoming weaker and could not stand on its legs, but the limbs were quite lax and showed not the slightest evidence of cramps. It seemed to suffer from thirst, and drank water freely when offered to it.

Killed under choloroform.

As it appeared to be very improbable that life would be prolonged until the following morning, chloroform was again administered at 7 P. M. and continued until respiration had ceased. A *post-mortem* examination was then performed immediately with the following results.

Post-mortem appearance: sanguineous fluid in peritoneum containing myriads of very active amœboid bioplasts.

On opening the abdomen the cavity was found to be distended with sanguineous fluid. This fluid was subjected to careful microscopic examination. It contained a few red blood-corpuscles and myriads of very active amœboid bioplasts, which in many cases, until their movements and changes of form were observed, presented a curiously marked resemblance to cylindrical epithelial cells. Many others, however, were ragged in outline, and passed off into long thread-like extensions. The fluid surrounding the cells was very clear, hardly any molecular matter could be detected in it, and only here and there was a minute tremulous monad to be seen.

But only very few monads.

Peritoneum injected.

The peritoneum and mesentery were intensely injected and thickened, but there was no distinct evidence of the presence of solid exudative flakes between the viscera.

Small intestines coated with, what seemed to be, inspissated blood, which could be peeled off leaving the mucous surface perfectly healthy.

The stomach contained about ten ounces of glairy fluid, its mucous surface appeared to be perfectly healthy, there were no points of extravasation present, and the vessels were not injected. The duodenum also appeared to be healthy and contained some bilious fluid. The mucous membrane of the jejunum was coated with a dark layer of what appeared to be inspissated blood. This layer became more and more marked lower down, and attained its maximum development in the ileum, where it was of the con-

---

* The results of introduction of such materials into the system through the mucous membrane of the Lungs will be made the subject of experiment shortly.

This coating ceased about a foot above the ileo-cœcal valve.

No extravasation, but much thickening of the mucous membrane.

sistence of treacle and of a dark tarry colour. This dark layer could be pealed off the surface of the mucous membrane, leaving the latter dry, but otherwise quite healthy in appearance. The tarry coating ceased abruptly about a foot above the ileo-cœcal valve and was replaced by one composed of the common, whitish, gelatinous mucus normally lining the intestines in dogs. The mucous membrane here also appeared quite healthy, and there was neither extravasation nor any evidences of detachment of epithelium present. The walls of the lower extremity of the ileum and those of the appendix vermiformis were considerably thickened. The large intestine appeared healthy internally.

Microscopical appearance of intestinal exudation.

Absence of red blood-corpuscles, but a profusion of blood-crystals.

The tarry and pale mucous coatings on the interior of the small intestine, together with the subjacent layers of the mucous membrane, were subjected to careful microscopic examination. The tarry layer consisted of a gelatinous, molecular, more or less fibrillated basis identical in appearance with that of the normal flakes of intestinal mucus. In, and on this, were innumerable blood-crystals, a few indistinct bioplastic masses and various particles of intestinal contents together with large numbers of ova. Not a single red blood-corpuscle was visible in spite of the extreme profusion of blood-crystals, and the distinct sanguineous hue, that even the thinnest layers, into which the material could be spread out, retained. The whitish grey coating, replacing the former one at the lower end of the ileum, was identical in appearance and structure with it, minus the red colour and the abundant blood-crystals, and was, in reality, what it appeared to be at first sight, namely the normal thick mucus of the gut.

The subjacent layer when scraped consisted of normal epithelial cells, and villi.

The material scraped from the mucous surfaces beneath these layers consisted entirely of distinct cylindrical epithelial cells and of detached villi, many of which showed their epithelial coating firmly and evenly attached, even, after the violence to which they had been subjected.

Not the slightest resemblance between the microscopical elements of the exudative and mucous layers.

There was not the slightest resemblance between the microscopic characters of this layer and those of the superincumbent one, whether the latter were of normal aspect as at the lower end of the ileum, or deeply blood-stained and tarry as further up.

Remaining abdominal viscera healthy.

The liver was dark in colour and very full of blood, but no farther change could be detected in it. The remaining abdominal organs were congested, but no special lesion could be detected in any of them. The bladder was full of urine.

Thoracic viscera healthy.

On opening the thorax, the pleural cavities were found to be free from fluid. The lungs were collapsed and healthy in texture. The heart was healthy, the right cavities full, but not distended with fluid blood, and the left auricle and ventricle empty.

Wax-cell preparations of blood from the heart were set aside and

when examined on the following day, were crowded with pus-like corpuscles, but

neither, monads nor bacteria could be seen nor did they subsequently appear.

A preparation of blood from the right side of the heart was mounted in a wax-cell and set aside for further examination, along with the preparation procured previous to the operation. Both preparations were examined on the following morning at 9 A. M., when the one had been kept for above 24 and the other for about 14 hours. On examination the former was found to be quite free from bacteria, and to contain very abundant bioplasts in the pus-like condition previously alluded to, whilst the latter only differed from it in there being rather fewer bioplasts free in the serum. They were again carefully examined two days subsequently. They both remained very fluid in consistence, very few bioplasts were present in a distinctly defined condition, they were aggregated in masses, and appeared to be rapidly undergoing disintegration. Neither bacteria nor active molecules could be anywhere detected in either preparation. On subsequent examination the only changes observed in either specimen were gradual disintegration and there was no development of bacteria in them.

An ounce of choleraic material—about 100 hours old, injected into peritoneal cavity of a dog:

EXPERIMENT LXIX.—At 12 noon of the same day in which the preceding experiment was performed, chloroform was administered to another large healthy pariah dog, and about one ounce of the same choleraic material was injected into the peritoneal cavity through a canula. The dog soon recovered from the primary effects of the operation, and was not affected by such distinctly marked rigors as the former animal had been.

Result: depression; neither cramps nor purging.

His general demeanour, however, was precisely similar to that observed as the result of the other operation; he was profoundly depressed, lying perfectly quiet and neither whining nor showing any other indication of pain. Neither fœces nor urine were passed throughout the whole day, and there were no evidences of spasm of any of the muscles. As he appeared fully less depressed than the other dog, it was decided to allow him the chance of surviving until the next morning, and his condition at that time had not materially altered, the only change perceptible being an apparent increase in the depression.

Killed under chloroform.

Chloroform was, accordingly, again administered at 7-30 A. M., 19½ hours after the operation, and the administration carried on until respiration ceased.

Post-mortem appearances.

The abdomen was opened before complete cessation of respiration and circulation. The cavity was distended with fluid of a somewhat less marked sanguineous hue than that present in the previous experiment, but, otherwise, it presented the same characters both to the unaided eye and when subjected to microscopic examination. The peritoneum, both visceral and parietal, presented well marked signs of inflammation, and the vessels on the intestines were highly injected and very red.

Peritonitis, with sanguineous fluid in the cavity.

Shreds of exudation over the liver, crowded with corpuscles, identical in appearance with those found in cholera-dejections.

There were a few shreds of soft lymph diffused over the surface of the liver, which, on microscopic examination, were found to consist of aggregations of more or less spherical corpuscles, identical in appearance, and probably also in nature with those present in such abundance in the fluid after the active, vital, amœboid movements had ceased. The resemblance of such shreds of soft lymph to the flocculi contained in choleraic evacuations cannot fail to strike any observer even at the first glance.

The small intestines coated with a dark sanguineous substance, and contained tarry fluid, except for a few inches above ileo-cœcal valve.

The mucous membrane of the stomach was healthy. The duodenum was also normal in aspect, and contained a little bile. The jejunum and ileum presented precisely the same phenomena as those present in the previous case, but to an even more marked degree, as, towards the middle of the ileum, the cavity of the gut contained tarry fluid in addition to the sanguineous coating of the mucous membrane. Towards the lower extremity of the ileum the walls of the intestine appeared to be considerably thickened. For a few inches above the ileo-cœcal valve the tarry coating was absent, and was replaced by a layer of the normal thick intestinal mucus.

Mucous coat not affected.

Specimens of these layers, and of the mucous membrane beneath them, were, in this instance also, carefully examined under the microscope, and their nature was found to be precisely similar. Here also the effusion had taken place without impairing the integrity of the epithelial coat of the mucous membrane in the slightest degree, the latter presenting a remarkably dry and firm aspect when the exudative layer was peeled off from it, and it was most remarkable to observe the very small number of epithelial cells which adhered to the latter in spite of the violence involved in the separation.

Large intestine not distinctly affected.

The large intestine contained a larger quantity of dark coloured fluid than was present in the previous case, but the gut was not affected in any way equally with the small intestine.

The rest of the abdominal organs were congested, but showed no other lesions of any kind.

The bladder was full.

Wax-cell preparation of blood presented numerous leucocytes after a few hours, but no bacteria.

The heart was healthy in appearance. A specimen of blood from the right ventricle was mounted in a wax-cell. When examined, eight hours after preparation, it was found to contain a considerable number of leucocytes, some of which were of large size, whilst others were still exhibiting amœboid movements. No distinct evidences of the presence of bacteria could be detected, although they were especially searched for with a $\frac{1}{8}$th immersion lens, nor did any appearances of the development of such bodies present themselves during the next four days, whilst the preparation was kept under observation.

Choleraic material seven days old, injected into the abdominal cavity.

EXPERIMENT LXX.—A large healthy pariah dog was put under the influence of chloroform at 11-30 A. M., and one ounce of a watery solution of the sediment of the choleraic evacuation employed in the two preceding experiments, and which had now been kept for seven days, was injected into the peritoneal cavity.

No result.

The animal appeared to be very little affected by the operation, had no rigors after it, showed no symptoms of pain, and in the afternoon ran home along with the servant, who had the charge of the dogs to his hut in a village, about half a mile off. On the following morning he was brought back, and at this time also appeared in no way affected by the operation. Chloroform was administered until respiration ceased, and a *post-mortem* examination was then immediately performed, nearly 24 hours after the injection had taken place.

Killed under chloroform, 24 hours after operation.

Post-mortem appearances; very slight peritonitis; viscera healthy.

On opening the abdomen about three ounces of pinkish-grey fluid were found in the peritoneal cavity. The mesentery was thickened and injected, and there were a few small patches of soft lymph on the liver. The walls of the intestines appeared to be slightly thickened, but they were otherwise normal in appearance. The bladder was distended with fluid. The rest of the abdominal and thoracic viscera appeared to be quite healthy.

Half an ounce of a solution of ordinary fœcal matter, three days old, injected into the abdominal cavity.

EXPERIMENT LXXI.—A strong, healthy pariah dog was put under the influence of chloroform at 8 A. M., and half an ounce of a solution of a normal evacuation was injected into the peritoneal cavity. The solution had been prepared three days previously, and was in an active state of decomposition.

The dog was kept under close observation for seven hours, during which it showed no marked symptoms of any kind, and then went home with the man in charge, walking along with him without manifesting any symptoms of pain or inconvenience. The man brought its body next morning and stated that, soon after he took it to his house, it suffered from severe rigors, and that it died about eight hours afterwards without having shown any other decided symptoms.

Death in about 15 hours.

There was no vomiting, and no evacuations were passed subsequent to the operation. A *post-mortem* examination was performed eight hours after the occurrence of death.

Post-mortem appearances.

On opening the abdomen, extensive signs of peritonitis presented themselves. The cavity contained an abundance of fluid of a reddish tint and somewhat thick consistence. When subjected to microscopic examination, it was found to contain a few red blood-corpuscles, and very numerous granular pyoid cells of a more or less circular form. They were all perfectly motionless, seemingly dead, and the fluid surrounding them was crowded with active bacteria and vibriones.

Reddish fluid in peritoneal cavity, containing a few red blood corpuscles, and numerous pus-like cells, with bacteria and vibriones.

Tarry coating of small intestines, except for a few inches above ileo-cœcal valve.

The interior of the small intestines presented the appearances previously described in Experiments LXVIII and LXIX. There was a continuous coating of a dark tarry aspect beneath which the epithelial surface appeared quite healthy. As before, about six inches of the ileum, immediately above the ileo-cœcal valve, was unaffected. The large intestine also was covered with a coating of tarry material.

No other noteworthy lesion was to be found in any of the abdominal or thoracic organs. There was no pleurisy.

Blood from the heart contained a few bacteria.

Specimens of blood from the right ventricle were found to contain a few bacteria, when subjected to careful examination under a $\frac{1}{12}$th immersion lens.

Six drachms of beef solution, 96 hours old, very putrid, injected into the peritoneal cavity.

EXPERIMENT LXXII.—An extremely powerful pariah dog was, with much difficulty, brought under the influence of chloroform at 8 A.M., and about six drachms of a decomposing solution of beef was injected into the peritoneal cavity. The solution had been prepared ninety-six hours previously, and at the time of the injection was of an intensely fetid odour and swarming with active bacteria and short vibriones.

No special symptoms; killed under chloroform 24 hours after operation.

The dog was somewhat dull and depressed throughout the course of the day, but on the following morning he did not appear to have become any worse, and was still so strong, as to give much trouble whilst chloroform was again administered until the cessation of respiration.

Post-mortem appearances: fluid in peritoneum swarming with amœboid bodies, but at first

A *post-mortem* examination was then performed at once, 24 hours after the injection of the fluid had taken place. On opening the abdomen the cavity was found to contain about two ounces of red serous fluid almost resembling pure blood in appearance. A preparation of this fluid was mounted in a wax-cell and examined one hour afterwards. It was then found to contain numerous red blood-corpuscles and myriads of active amœboid bioplasts, but no bacteria could be detected in it although they were specially searched for under a $\frac{1}{8}$ immersion lens.

no bacteria, which however were plentiful next day.

On the following day, however, there were plenty of active bacteria present. The red corpuscles remained unchanged; but the bioplasts had lost all amœboid motion, had assumed a more or less spherical form, and were in process of disintegration. By the following morning the activity of the bacteria had ceased, and shortly afterwards the preparation dried up.

Intestines contained tarry sanguineous effusion; other viscera healthy.

The intestines were congested externally, and their internal surface presented patches of the tarry sanguineous effusion described as occurring in the preceding Experiments Nos. LXVIII, LXIX, &c. The appendix vermiformis was of very large size, but appeared to be quite healthy. The rest of the abdominal and thoracic viscera appeared not to be affected in any way, and the bladder was full of urine.

No bacteria appeared in a wax-cell preparation of the blood.

A specimen of blood from the right ventricle was mounted in a wax-cell and examined an hour afterwards. No monads or bacteria could be detected in it, but an abundance of delicate, active white corpuscles were present. The preparation was kept under observation for some days, but there was no indication of the development of bacteria in it.

Four drachms of fresh peritoneal fluid injected into the abdominal cavity.

EXPERIMENT LXXIII.—A healthy pariah dog was put under the influence of chloroform, and four drachms of the fluid from the peritoneal cavity of the dog of Experiment No. LXXII were injected into the abdomen. The fluid had been obtained at the *post-mortem* examination in the above experiment, which was performed immediately before the injection took place.

Death in about 12 hours.

The animal rapidly recovered from the influence of the chloroform, and appeared to be little affected by the operation. It remained quiet during the day, showing no symptoms of pain, or of cramps, but it vomited once or twice. Death occurred during the early part of the night, and a *post-mortem* examination was performed on the following morning.

Post-mortem appearances; fluid in peritoneum

On opening the abdomen, the peritoneum was found to be extremely congested, and the cavity contained a considerable amount of sero-sanguinolent fluid. A preparation of this fluid was mounted in a wax-cell as usual and examined about an hour afterwards. It was then found to be swarming with very active bacteria, and to contain a few red blood-corpuscles, together with numerous small pyoid corpuscles in a state of disintegration. When again examined, after the lapse of a few hours, the bacteria were observed in unimpaired activity, and the breaking up of the pyoid corpuscles appeared to be progressing rapidly, many of them containing from one to three granular rings or Nuclei in their interior; whilst in many such cells the molecules between the rings or Nuclei and the outer pellicle were in active swarming motion.

crowded with bacteria and small pus-like corpuscles, which contained active molecules.

On the following day almost all the corpuscles had disappeared or had become uniformly granular, and the movements of the bacteria had become more sluggish. The preparation was kept under observation for several days; but the only further changes observed to take place in it were a progressive disintegration of the granular corpuscles and a gradual diminution in the activity of the bacteria.

The intestines were coated internally with a sanguineous layer of a deep prune-juice colour. The rest of the abdominal viscera appeared to be unaffected. On opening the thorax, there was found to be no pleurisy; the pleural cavities contained no fluid, and the lungs were quite healthy. The pericardium was injected and contained reddish serous fluid. The heart was normal.

Intestines coated with a prune-juice-like substance.

Pericardium injected and contained reddish fluid.

A preparation of blood from the right ventricle was mounted, as usual, in a wax-cell. When examined, about an hour afterwards, nothing abnormal was detected in it. After the lapse of a few hours, the preparation was again examined. Crystals had begun to form along the margin; there was only a narrow ring of free serum, and very few white corpuscles were visible. At first no monads or bacteria could be detected; but a rapid development of very delicate vibriones took place, whilst the preparation was under observation. They were elongated, of extreme tenuity and of great activity. On the following day the serum was swarming with the bodies described above. They remained very active, and their delicacy was so great as to necessitate most careful management of the light, in order to render them visible. No further development occurred; and the only changes subsequently observed were gradual diminution in the activity of the vibriones together with breaking up of the small number of white cells present in the serum.

In a wax-cell preparation of blood, no bacteria were detected at first, but small vibriones gradually appeared;

but the light required careful adjustment, in order to see them.

Experiment LXXIV.—Whilst the *post-mortem* examination described in the previous experiment was being performed, a syringe was filled with the fluid contained in the peritoneal cavity, and another powerful pariah having been subjected to the influence of chloroform, about one ounce of this fluid was injected into the abdomen. During the operation, respiration and circulation ceased for a short time, but they were easily re-established, and the dog rapidly recovered from the influence of the chloroform. At first, it appeared to be very little affected by the injection; but it rapidly passed into a state of extreme depression, and died five hours after the operation.

An ounce of fresh peritoneal fluid injected into the abdominal cavity.

Death in 5 hours.

A *post-mortem* examination was performed two hours after death, with the following results. *Rigor mortis* had just begun to set in, but the tissues were still warm. On opening the abdomen, there was found to be very marked peritonitis. There was a large quantity of red fluid in the abdominal cavity.

Post-mortem appearances: peritonitis very marked;

When a preparation of this fluid mounted in a wax-cell was examined an hour after its removal from the body, it was found to be crowded with minute, slightly moving bacteria and monads, and to contain masses of very small disintegrating pyoid corpuscles, together with numerous free oil-globules. The preparation was kept under observation for several days; but no further developments occurred, and the activity of the

blood contained active bacteria, small disintegrating pus-like corpuscles and oil-globules.

bacteria gradually ceased. The intestines were rough and injected externally; but, when laid open, they did not show nearly so much of the prune-juice exudation as had been observed in other previous instances. The condition of the mucous surface as regarded exudation closely corresponded with that observed in the case of the dog, into the peritoneal cavity of which decomposing beef-juice had been injected (*vide* Experiment LXXII). The rest of the abdominal organs appeared to be quite healthy.

Intestines coated with a prune-juice-like substance.

On opening the thorax, there was found to be well marked injection of the pericardium, especially on its external surface; but the pleuræ lungs and heart were unaffected. A preparation of blood from the right ventricle was examined an hour afterwards, and was found to be full of very minute active particles. No farther development of these bodies was detected during the subsequent few days in which the preparation was preserved.

Thoracic viscera: injected appearance of pericardium.

Blood full of minute active particles.

EXPERIMENT LXXV.—Chloroform having been administered to a strong healthy pariah dog, an ounce of a decomposing solution of normal evacuation was injected into the peritoneal cavity. The solution employed had been kept for six hours in a wide-necked bottle which was loosely plugged with cotton-wool, in order to keep flies and other insects out.

A solution of normal evacuation, six hours old, injected into the abdominal cavity.

The animal rapidly recovered from the influence of the chloroform and showed no symptoms of pain or of cramps, but after some time it passed some bloody mucous evacuations.

It was killed with chloroform fourteen hours after the injection, and a *post-mortem* examination was performed at once. On opening the abdomen, the peritoneum was found to be intensely inflamed and thickened, and flakes of soft lymph were adhering to the liver and other viscera. The cavity contained about a pint of sanguineous fluid. A preparation of this fluid in a wax-cell was examined two hours subsequent to its removal from the abdomen; it was found to consist of a clear fluid crowded with bodies resembling the white corpuscles of the blood, and containing numerous red blood-corpuscles also. More than half of the white cells were still actively emitting long stringy protrusions. There were numerous delicate fibrinoid threads netted through the preparation, but although a careful search was made for them with the $\frac{1}{4}$th immersion lens, neither bacteria nor vibriones could be anywhere discovered in it. Three hours afterwards, however, a few motionless bacteroid bodies were observed in it, and twenty-four hours after, a few moving bacteria were present, and the field was covered with elongated motionless vibriones (Leptothrix ?).

After passing mucous stools, it was killed under chloroform, 14 hours after operation.

Post-mortem appearances: intense peritonitis; fluid in peritoneum crowded with granular corpuscles:

Bacteria developed in the course of a few hours.

When the small intestines were laid open, the ileum immediately above the ileo-cœcal valve was found to present a perfectly normal aspect, but throughout the rest of the gut the mucous membrane was coated with a tarry layer similar to that observed and described in several previous cases. As before, this was found on microscopic examination to consist of the normal tough intestinal mucus crowded with blood-crystals and containing a few white granular cells, but entirely devoid of red blood-corpuscles and epithelial cells. There was no detachment of epithelium, and on peeling off the bloody, mucous layer, the epithelial coat was exposed quite intact and merely characterised by a certain dryness of appearance. The large intestine was unaffected, and the rest of the abdominal organs appeared to be healthy. The bladder was full of urine.

Except immediately above the ileo-cœcal valve, the intestine was coated with tarry substance consisting of

Mucus, blood-crystals, white granular cells, but no red corpuscles nor epithelial cells.

On opening the thorax the lungs and pleuræ were found to be perfectly healthy, but the pericardium was injected, and there were deposits of lymph on its surface. The heart did not present any abnormal appearances.

Pericardium injected with deposits of lymph on its surface.

At first no monads were visible, but they developed during the day.

A preparation of blood from the heart was, as usual, mounted in a wax-cell. When examined an hour afterwards, no traces of monads or bacteria could be detected in it. Three hours subsequently it was again examined, and one or two moving molecules, together with some still ones, were then detected, whilst very few white corpuscles had crawled out into the serum. On the following day there was an abundance of active bacteria in the serum; they continued in motion throughout that day, but had all become still when the preparation was again examined on the subsequent morning.

An ounce of peritonitic fluid, 36 hours old, injected into the abdominal cavity.

EXPERIMENT LXXVI.—A very powerful pariah dog was put under the influence of chloroform, and one ounce of the peritonitic fluid obtained from the abdominal cavity of the dog of Experiment LXXII, and which had been previously employed in Experiment LXXIII, was injected into the peritoneal cavity. This fluid had been kept in an open gallipot for thirty-six hours at the time when the injection was performed.

No marked effect.

The dog rapidly recovered from the influence of the chloroform, and remained somewhat dull and sluggish throughout the course of evening. It did not, however, show any symptoms of pain or cramps, and on the following morning, about fifteen hours after the injection, it did not appear to be any worse.

Killed under chloroform, 15 hours after operation.

It was accordingly killed with chloroform, and a *post-mortem* examination was performed at once. The appearances which presented themselves did not differ materially from those described in connection with the preceding experiments. Preparations of the peritoneal fluid and of the blood were, as usual, mounted in wax-cells. The peritoneal fluid was examined an hour after its removal from the body, and was then found to contain an abundance of minute active bacteria. There were also numerous bioplasts and red blood-corpuscles, the former of irregular shape, and showing slow changes in form only. Three hours afterwards the bacteria continued in activity, the bioplasts were very ragged in outline, and there were now numerous groups of delicate, beaded, motionless threads resembling leptothrix, present. On the following day these threads had disappeared, and the preparation was crowded with bacteria and monads, some of which were motionless, whilst others were in full activity.

Post-mortem appearances: peritonitis; the fluid contained active bacteria and active ragged bioplasts.

The blood contained a few active bacteria.

The preparation of the blood was also examined an hour after it had been set up. It then showed no distinct bacteria, but contained numerous minute, motionless molecules. It was again examined after an interval of three hours, and a few active molecules, together with two very active short vibriones, were observed in the serous ring. Only two or three white cells had crept out. A second preparation, however, at this time contained an abundance of free white cells, and showed neither active molecules nor bacteria. On the following day the former preparation showed some patches of still molecules: the latter now contained a few active bacteria. No farther developments occurred in either of these preparations subsequently.

Half an ounce of fresh peritonitic fluid injected into the abdominal cavity.

EXPERIMENT LXXVII.—A healthy pariah dog was put under the influence of chloroform at 8-30 A. M., and half an ounce of peritonitic fluid which had immediately before been removed from the abdominal cavity of the dog of Experiment LXXV wa injected into the abdomen. The animal appeared to be somewhat dull an depressed for a short time, but in the afternoon it seemed to have entirely recover ed from the effects of the operation. It continued in apparent health throughou the following day, and was killed with chloroforn on the next morning, 48 hours after the injection

No marked effect; killed under chloroform 48 hours after operation.

No peritonitis; all the organs healthy.

A *post-mortem* examination was performed at once, but no lesions coul be detected. There was no peritonitis, and all th organs were quite healthy in aspect.

An ounce of a solution of healthy evacuation injected into the abdominal cavity.

EXPERIMENT LXXVIII.—A large healthy pariah dog was put under the influence of chloroform, and an ounce of the supernatant fluid of a solution of healthy evacuation was injected into the peritoneal cavity. The solution was that employed in Experiment LXXV, and was at the time of injection 72 hours old. It had been retained as before in a wide-necked bottle plugged loosely with cotton-wool.

No marked effect: 24 hours after operation the dog was again put under chloroform and the abdomen opened; marked peritonitis evident.

The dog was dull and depressed during the day, but drank water freely in the evening, and on the following morning, 24 hours after the operation, it appeared to be perfectly well. It was, accordingly, again put under chloroform and the abdominal cavity opened. There was considerable inflammation of the parietal peritoneum, the mesentery and intestines were intensely injected and inflamed, but there was no fluid present.

A loop of gut ligatured, filled with water, and returned into the abdomen; and chloroform continued for an hour, when the animal was killed.

A loop of the small intestine was ligatured, the ligatured portion filled with tepid water, by means of a pointed syringe introduced through the walls, and the gut returned to the abdomen which was then sewn up. The administration of chloroform was then continued and the animal died under its influence after an hour.

Post-mortem appearances: intense congestion of intestines, except the ligatured loop, which was macerated and covered with a layer of loose epithelium.

A *post-mortem* examination was performed about half an hour after death. The interior surface of the small intestines with the exception of the ligatured loop was intensely congested, the latter portion had lost all traces of congestion, presented a macerated appearance, and was covered with a layer of soft pale loose epithelium. No other changes observed.

An ounce of fresh choleraic evacuation injected into the abdominal cavity.

EXPERIMENT LXXIX.—A healthy pariah dog was put under the influence of chloroform, and one ounce of a choleraic evacuation, which had been passed by a patient in hospital a few minutes previously, was injected into the peritoneal cavity. The fluid employed was the same as that used in Experiment I of the series of injections into the veins, and the two operations were performed at the same time.

No result. Killed 24 hours after operation.

The animal appeared to be very little affected by the operation, continued in the same condition throughout the course of the day, and on the following morning, 24 hours after the injection, seemed to be quite well.

Placed under chloroform 24 hours after operation and the abdomen opened; there was intense peritonitis; the watery fluid in peritoneum full of exudation-cells and bacteria.

The preparation was reserved in a moist chamber and at the close of 24 hours showed an abundance of active bacteria.

It was, accordingly, again put under the influence of chloroform and the abdominal cavity opened. It contained an abundance of yellowish watery fluid, which, on microscopic examination, was found to be full of exudation-cells and perfectly free from bacteria. The parietal peritoneum was densely injected and showed distinct evidences of healing peritonitis.

A loop of the small intestine was ligatured, salt and water injected, then returned into the abdomen.

The small intestine was deeply congested. A loop of it having been ligatured, a solution of salt and water was injected into the ligatured portion. The intestine was then returned and the abdomen closed.

Chloroform having been continued for an hour, the loop was examined, but no absorption had taken place.

The administration of chloroform was continued, and the animal killed at the close of an hour. The ligatured loop of intestine was found to be full of fluid, no absorption appearing to have occurred. The interior surface was coated with white gelatinous matter, and flocculi of a similar nature were floating in the fluid.

The interior of this portion was lined with a gelatinous substance, chiefly composed of epithelium, and when this was scraped off the surface below was deeply congested, so was the remainder of the intestine, which was lined with the prune-juice coating.

These flocculi were found, on microscopic examination, to be mainly composed of epithelium, and, when the gelatinous coating was scraped off, the mucous membrane beneath it was found to be deeply congested. The rest of the intestine was intensely congested, and showed patches of the prune-juice coating so characteristic of the mucous membrane of the gut in peritonitis induced by the injection of fluids into the abdominal cavity.

C.—A short review of the preceding experiments.

In attempting a short analysis of the preceding series of experiments, it will perhaps be as good an arrangement as any to adhere to the classification already adopted in their narration.

The number of animals into whose veins cholera fluid had been introduced.

1. Thirty-three experiments have been described, more or less in detail, in connection with the introduction of small quantities of the alvine discharges of cholera patients, unmodified by any admixture, into the veins of dogs of various size and age; whereas seven others are given in which the choleraic injecting material had been diluted with water. Thirty-two dogs were made use of in carrying out these series of thirty-three experiments, one dog having been resorted to on two occasions for the same purpose; whereas some of the others had either already been operated upon, or were so in another class of experiments subsequently undertaken.

The rate of mortality, about 43 per cent.

In these thirty-two experiments sixteen deaths occurred: thirteen evidently from the direct action of the putrefying material exerted through or upon the blood; two apparently from shock, and one dog was killed owing to erysipelatous inflammation of a severe kind attacking the wound. These are consequently left out of the calculation. The mortality, therefore, resulting from the direct introduction of choleraic dejections in quantities varying from two to six drachms may be set down as amounting to about 43 per cent.

A Table showing the number of experiments with undiluted choleraic material, the mortality, and the principal lesions produced by its introduction into the veins of dogs.

Age of choleraic material injected.	Number of Experiments.	Number of Recoveries.	Number of Deaths.	Number in which the *intestines* were affected.	Number in which the *pericardium* was affected.	Number in which *embolism* was detected.	REMARKS.
Quite recent ...	1	...	1	...	...	1	Erysipelas attacked the wound.
One day	2	2	...	1	...	...	
Two days ...	3	3	...	...	...	...	
Three " ...	4	1	3	3	1	...	
Four " ...	11	5	6	7	2	2	Pleurisy present in 1.
Six " ...	1	1	...	...	...	...	
Eight " ...	1	...	1	1	...	...	
Ten " ...	1	...	1	...	...	...	Death from shock.
Twelve " ...	2	1	1	...	...	...	" " "
Fifteen " ...	3	2	1	1	...	...	
Eighteen " ...	1	...	1	...	...	...	
Nineteen " ...	2	1	1	1	...	...	
Twenty-two days ...	1	1	...	...	...	...	
TOTAL ...	33	17	16	14	3	3	

We much regret that the experiments on perfectly fresh choleraic material are not more numerous, a defect which we trust to remedy very shortly. The difficulty has been to procure a suitable animal when an opportunity occurred for resorting to the experiment—to obtain a dog as it is to obtain anything else at the moment wanted being proverbially uncertain.

Mortality when the material injected was from 1 to 3 days old, and

With this material, one and two days old, five experiments were performed, but all the dogs recovered; whereas when the material used had been kept for three days, three out of four dogs experimented upon died within from three to six hours, and with well marked lesions in each of them which will be referred to further on. It so happens that in all four of these experiments the same material was used; it was obtained from a questionable case of cholera, and was by no means so offensive to the smell as is generally the case with choleraic dejecta after being kept so long. There are eleven cases recorded in which the choleraic material injected was four days old; of these, six died, or about 54 per cent. In one of the animals which did not die, but was slaughtered, it was found that well-marked intestinal lesions existed. Twelve experiments are likewise cited in which the material used varied from six to twenty-two days old. Four of the dogs died from causes reasonably attributable to the poisonous action of the material introduced, whereas two (puppies) died of shock.

from 4 days old; also from 6 to 20 days old.

Mortality when diluted choleraic material was introduced, 37 per cent.

2. Of the seven cases in which the choleraic material injected into the veins had been more or less diluted with water, two died, which will be equal to about 35 per cent., this being considerably lower than the mortality when the undiluted material was resorted to. The *post-mortem* appearances were precisely analogous in both instances, but these will be referred to more at length hereafter.

Mortality when solution of ordinary fœcal matter was introduced, 33 per cent.

3. There were twenty-one experiments on the introduction of solutions of ordinary alvine discharges carried out; nine of the animals died, three of these deaths we attribute to shock, which for the sake of uniformity we also leave out of the calculation, thus leaving six deaths, or a mortality a little over 33 per cent., about 2 per cent. less than the mortality from the injection of the diluted choleraic material.

A Table showing the number of experiments with solutions of normal alvine discharges, the mortality, and the principal lesions induced by their introduction into the veins of dogs.

Age of alvine solutions injected.	Number of Experiments.	Number of Recoveries.	Number of Deaths.	Number in which the *intestines* were affected.	Number in which *pericardium* was affected	Number in which the *embolism* was detected.	REMARKS.
One day	4	2	2	2	...	...	
Two days	3	...	3	1	...	...	2 died from shock.
Three „	4	3	1	...	...	1	1 „ „
Four „	8	5	3	2	...	...	Pleurisy occurred in one.
Five „	1	1	...	...	...	...	
Seven „	1	1	...	...	...	...	
TOTAL ...	21	12	9	5	...	1	

Result of the injection of other organic solutions.

Four experiments are cited in which solution of fowl's blood, filtered and unfiltered, fresh and decomposed, had been introduced into the circulation without producing the slightest result; and one rather remarkable case is given in which the would suppose, highly noxious fluid obtained from the abdominal cavity of a dog, in whom extreme peritonitis had recently been induced, and which might be supposed to be highly noxious, produced no appreciable effect; all the organs when examined twenty-four hours after the operation were perfectly healthy.

The frequent occurrence of intestinal lesions.

In carefully looking over the account of the *post-mortem* lesions which occurred in the three preceding classes of experiments, we are struck with the almost constant presence of intestinal complications, varying from more or less intense congestion of the villi and intestinal glands to complete disorganisation of the greater portion of the mucous membrane of the small intestine, its epithelial lining becoming completely detached.

Portions of intestine affected.

Exemption of the portion near ileo-cœcal valve.

With respect to the portion of intestine thus affected, it will be observed that the lesions have been limited to the small intestine and, in the generality of cases to its whole course from the duodenum downwards, except for a distance of from one to two feet above the ileo-cœcal valve, a portion which in almost every instance has escaped being materially affected. We are totally unable to account for the cause of this exemption, and have tried in vain to reconcile the phenomenon with any known anatomical peculiarities of this part of the gut. We were the more surprised, as we had previously observed at the autopsies of cholera patients—a subject which we, however, for the present postpone—that it was just this very portion which seemed to show the most marked tendency towards the congestions which every now and then are observed to be present in this disease. Future observation may modify this impression, but we venture to go out of our way a little in order to draw attention to it. In no instance was any tendency to special affection of the intestinal glands observed. The stomach and the large intestine have in nearly all the cases seemed to us to be quite healthy.

The oscillatoria-like vibriones in the intestines.

Resemblance between these cases and those of *mycosis intestinalis*.

In connection with these observations on the disorganisation which the small intestine is subject to, when putrefying matters are injected into the blood, it may be remarked that on three occasions we observed a great number of vibriones or oscillatoria-like filaments, embedded in the mucus which lined the intestine after the substance which was free and filling the lumen of the gut had been wiped away. These may have existed in more numerous instances, and been overlooked; still it may seem strange that they all three occurred in dogs into whose veins the dejection from a very mild or even questionable case of cholera, above referred to, as having proved so fatal had been injected. We have deemed these occurrences as worthy of attention, more especially when taken in connection with the cases of mycosis intestinalis, which, we understand, are prominently alluded to by Professor Parkes in his Annual Review of Hygiene in the recently issued Report of the Army Medical Department, which has however not yet reached Calcutta. We shall certainly continue to watch closely for any organisms of the kind in the intestinal canal of man and of animals. It will be seen that similar actively moving vibriones were detected in the mesenteric glands, but not in the blood.

Exceptional cases of resistance to the effects of putrefying substances observed.

Whilst tabulating the results of the experiments recorded, we were somewhat surprised to observe that when a dog had once recovered from the effects of an operation, succeeding operations had not, in a single instance, proved fatal to it, no matter whether the material introduced into its veins consisted of choleraic or non-choleraic, or of alternate doses of these. One of these animals, a healthy but by no means a very large dog, was subjected to four experiments, a vein in each limb having been injected and tied, without result; another was made use of on three occasions in a similar way, and ten on two occasions, all recovering perfectly. This appears to us to argue very strongly in favour of a predisposition, on the part of animals at all events, to be affected by septic influences.

No marked preponderance of cases of embolism.

There were comparatively very few instances in which it could be distinctly noted that marked embolism had occurred; not more than six in sixty-seven experiments. All the dogs, however, were not killed and examined, consequently secondary diseases may have become developed in them afterwards.

Number of experiments, and nature of fluid introduced into the peritoneal cavity.

4. We have recorded twelve experiments on the effect of injecting the peritoneal cavity with solutions of organic materials of a similar nature to those adopted in the experiments just referred to. Four consisted of choleraic material, three of ordinary alvine discharge, one of a decomposing solution of beef, and four of peritonitic fluid recent and decomposed. Deaths only occurred in three cases, namely, two after the introduction of fluid which had just been obtained from the peritoneal cavity of another dog, and one after

the introduction of a solution of decomposing ordinary alvine discharge, the remainder were all killed within twenty-four hours of the operation, and all, whether they died or were killed, presented the same marked lesion at the autopsy, with two exceptions—one, a dog into whose peritoneum an ounce of fresh peritonitic fluid had been injected without producing any special symptom during life or any lesion evident after death; the other a case in which the injected material consisted of a solution of choleraic discharge.

A Table showing the number of experiments in which decomposing organic solutions were introduced into the peritoneal cavity, the mortality, and the principal lesions produced.

Nature of solution introduced.	Number of Experiments.	Number of Deaths.	Number killed within 24 or 48 hours.	Number in which the *peritoneum* was affected.	Number in which the *pericardium* was affected.	Number in which the *pleura* was affected.	Number in which the *intestines* were affected.
Decomposing beef-tea ...	1	...	1	...	...	...	1
Peritonitic fluid ...	4	2	2	3	2	...	3
Choleraic dejection ...	4	...	4	4	...	...	3
Normal „ ...	3	1	2	3	1	...	3
TOTAL ...	12	3	9	10	3	...	10

The intestinal lesion produced materially different in this series of experiments.

As in the previous series of experiments with decomposing organic solutions, so in this, the most prominent and constant *post-mortem* phenomenon observed was the affection of the mucous surface of the small intestines. The lesion, however, appeared to us to be of a very different nature; in fact the mucous membrane itself was not in a single instance materially affected, but a sanguineous exudation had taken place giving the tube of the gut a more or less, evenly distributed coating, which, when carefully peeled off with a forceps, left the mucous surface and its epithelial lining intact. This matter was on each occasion very carefully looked into, and the substance exuded, as well as the base upon which it was spread, were subjected to careful microscopic examination. The former consisted, almost entirely, of altered blood elements, blood-crystals, &c., but no entire red corpuscle could be detected, whereas the mucus-surface over which it was spread consisted of the unaltered structures belonging to the part.

Result of filling isolated loops of congested intestine with fluid.

In two cases in which the intestines were particularly congested, a loop of the gut was tied whilst the animal was still alive but under chloroform, and luke-warm water injected into the ligatured portion in one case, and salt-and-water in the other, the gut in both cases being returned in to the abdomen, and chloroform being continued for an hour. When subsequently examined it was found that no absorption had taken place, but the fluid had so macerated the mucous membrane, that the epithelium had become detached, and floated in flakes in the fluid which had been introduced, and in one of the cases the subjacent mucous membrane had lost all appearance of congestion, whereas it was found to have retained it in the other. In the non-isolated portions of the mucous surface, the small intestine in both instances was intensely injected, otherwise the structure of the membrane was intact.

It may be remarked that in this series of experiments also, a portion of the intestine for a short distance above the ileo-cœcal valve was not materially affected.

Association of pericarditis with peritonitis but not with pleuritis.

In connection with this series it is also to be noted that *Pericarditis*, more or less distinct, was observed in fully one-half of the cases; that portion of the pericardial sac in immediate connection with the diaphragm was the part usually affected, together with the portion immediately attached to the sternum. Perhaps the origin of this may be explained by one of the series of *Observations on the Anatomy of Serous Membranes*, lately published by Drs. Burdon Sanderson and Klein, which shows that when various colouring matters are introduced into the abdominal cavity, the lymphatic vascular system of the diaphragm becomes completely injected, as *also, the sternal vessels and sternal glands.*

Intimate connection of the observation with the Lactic acid theory of Rheumatism.

The production of *Pericarditis* but without the co-incident occurrence of pleurisy, by the injection of various putrefying substances into the peritoneum, is especially worthy of note, seeing that the opinion is strongly held by many, that, as Lactic acid, when injected in a similar way (as was demonstrated by Dr. B. W. Richardson), produces inflammation of the serous membrane of the heart, this acid must in some way be connected with the phenomena observed in Rheumatism if not in reality its cause. It seems to us that putrefying substances may, on the same grounds, lay claim to a somewhat similar relationship.

Microscopical appearance of the peritonitic fluid.

With respect to the nature of the fluid produced by the inflammation which had been brought on by the various organic solutions described, it may be observed that under the microscope no difference whatever could be detected between the fluids, beyond that in some cases red blood-corpuscles formed a more prominent feature than in others, but this increased ratio was by no means confined to any particular class of the organic solutions which had been introduced into the abdominal cavity. In the fresh condition this fluid swarmed with irregular masses of bioplasm exhibiting great activity, and very rapidly undergoing the process of segmentation.

When the fluid produced in the peritoneal cavity was transferred to the abdomen of another dog, the bioplastic bodies in the resulting exudation appeared to us to have become smaller and less active; this statement, however, we make reservedly.

Relation existing between the development of bacteria and the activity of the inflammatory process.

With regard to the numbers of bacteria present in this fluid, a fluid by the way, resulting from the introduction of solutions generally teeming with such organisms, we are convinced that no material increase takes place so long as the inflammatory process is progressing actively. It will be observed, on reference to the experiments bearing on this matter, that in several instances not a single bacterium could be detected in the recent fluid, and that in all, the numbers present appeared to bear an inverse ratio to the number and activity of the bioplasts.

The bearing of these experiments on the symptoms and lesions in cholera.

It will be seen that this series of experiments also, failed to induce lesions or phenomena identical in nature with those of cholera; nay more, the affections of the intestine here present, appeared rather to be the result of local disturbance of the circulation excited by the inflammatory action induced by the introduction of extraneous matter into the peritoneal cavity than of the action of any specific agent; in this series likewise, no special action appeared to be excited by choleraic as contrasted with other material. Taken together, the entire series of these preliminary experiments has not afforded any evidence in favour of the existence of a specific poison contained in choleraic excreta, peculiar to them alone, and giving rise to special phenomena when introduced into the system. The number of our experiments do not appear to us to warrant any definite conclusion regarding a difference *in degree* in toxic influence between the two classes of materials; they merely indicate the absence of any special action peculiar to one and absent in the other when introduced into the system by special channels.

Their practical bearing on sanitation.

It must, however, be evident at first sight that the results obtained from these experiments, have a most important practical bearing on sanitation, seeing that they point most distinctly to the influence of decomposing organic matters in the production of intestinal disease; and show, moreover, that this influence may exist in a most potent form without its presence being in any degree proportionally indicated by the amount of fœtor associated with it.

PART III.

EXPERIMENTS ON THE SECTION OF THE SPLANCHNIC AND MESENTERIC NERVES.

Points of difference between lesions in experiments and those of cholera considered with a view to future modification.

When we had satisfied ourselves that decomposing organic matters introduced into the circulation exerted the special if not specific actions previously described, on the intestinal mucous membrane, but an action producing lesions materially differing from those characteristic of cholera, we were naturally led to consider the principal points of dissimilarity with a view to ascertain whether future experiments might not be susceptible of any modifications Calculated to attain more consonant results.

Absence of increased secretion of intestinal fluid.

In doing so, one of the most striking differences, which at once presented itself to observation, one, too, in regard to which there could be no debate, was the almost total absence of any increased secretion of fluid from the mucous membrane, however profoundly the latter might have been otherwise affected.

Choice of means of inducing this increased secretion.

We had then to consider by what means we might best promote such an increased secretion, so that by combining its employment with the experiments as previously performed, we might, at all events, assimilate the conditions in the two instances a little more closely to one another. The secretion of fluid might of course have been promoted by the use of drugs or other media introduced into the system, but the complexity of the subject would have been greatly increased by such a mode of procedure, and we therefore decided in the first place to attempt to attain the desired end by means of direct operative interference. It next became necessary to determine in what that interference should consist, and that having been settled, to test with care the effects arising from its influence, when employed alone, before proceeding to combine it with any other experiment.

Section of nerves selected.

The best means available and which appeared to warrant a hope of success was section of the intestinal nerves. Moreau's celebrated experiment on section of these nerves showed that the resultant paralysis was accompanied by a copious secretion of watery fluid from the mucous membrane, and it was previously asserted by Pflüger and Nasse that the splanchnic nerves exerted an inhibitory action on the movements of the small intestine, so that there were fair grounds for the selection of such operations with a view to their combination with the experiments on the injection of organic fluids into the circulation.

A.—Section of the Splanchnic Nerves.

Section of the splanchnic nerves tried first.

Before proceeding to repeat Moreau's experiment, the effects of division of the splanchnic nerves were carefully tested, seeing that it was desirable, if possible, to obtain a means of influencing the whole of the small intestine simultaneously, and not a mere isolated loop or loops as in the procedure adopted by Moreau. The difficulties of such an operation are considerable, and cannot be overcome without some practice, for the situation of the nerves is such that injury to important vessels and viscera is very easily caused, and the abdominal portion of the nerves in the dog is so short as to render it at first a matter of difficulty to distinguish and isolate such small cords as they are. In our experiments the greater splanchnics alone were divided as the lesser nerves are very difficult to secure, due to their small size and to the fact that there is no such definite guide to their position as in the case of the larger nerves. This guide is afforded by the supra-renal capsule. If the outer edge of this body be carefully cleaned, the greater splanchnic may be found with comparative ease, just as it passes beneath it to enter the semilunar ganglion. The main difficulty in the way is a vein

Difficulties of the operation.

of considerable size, which, near the gland, lies close to and almost parallel with the nerve, and which is very liable to be injured in an operation performed in such a narrow space, and affording so many obstructions to the free access of light, as is the angle between the ribs, the diaphragm, and the transverse processes of the vertebræ. Numerous failures first occured, but eight operations were successfully performed with the results shown in the following Statement:—

Eight operations successfully performed.

No.	Nerves divided.	Periods of survival after operation.	Results.
1	Right	A few minutes ...	No result.
2	Left	1 hour ...	Mucous membrane dry.
3	Left	1 „ ...	„ „ pale and dry.
4	Left	1 „ ...	„ „ „ „
5	Both	½ „ ...	„ „ „ „
6	Left	1 „ ..	„ „ „ „
7	Right	9½ „ ...	„ „ „ „
8	Both	10 „ ...	„ „ dry.

The following cases have been selected from among these experiments as being the most interesting of them:—

Selected cases of the operation.

EXPERIMENT I. (*No.* 5).—A healthy young pariah dog was put under the influence of chloroform, and both splanchnic nerves were divided. The administration of chloroform was then continued for half an hour longer, and the animal subsequently killed. The mucous membrane of the small intestines was not in the least congested; it was on the contrary pale and dry-looking, and the cavity of the gut was absolutely devoid of any fluid whatever.

Both nerves divided without result.

EXPERIMENT II. (*No.* 7).—A large healthy pariah dog having been put under the influence of chloroform, the right splanchnic nerve was divided. The animal was killed 9½ hours after the operation and a *post-mortem* examination performed at once. The external surface of the intestines was somewhat congested, and there was a little absolute peritonitis in the neighbourhood of the wound, but there was hardly any fluid in the abdominal cavity. Although no evacuations had been passed subsequent to the operation, the intestines were found to be empty, and their mucous surface pale and dry. The bladder was full of urine, secreted since the operation. This was carefully examined and was found to contain a trace of albumen, but no evidence of the presence of sugar could be detected in it.

Right nerve divided; no result; no glycosuria.

EXPERIMENT III. (*No.* 8).—A healthy pariah dog of average size was put under the influence of chloroform, and both greater splanchnic nerves were divided. Ten hours afterwards chloroform was again administered, and the administration continued until death occurred. An immediate *post-mortem* examination was performed, the abdomen being opened before circulation had ceased. The intestines were pale externally, and the mesentery only here and there showed any evidences of peritonitic action. The intestines were empty, and the mucous membrane dry; in greater part normal in appearance, but here and there coated with a thin layer of sanguineous exudation.

Both nerves divided without result.

In all cases careful dissections were made, in order to ascertain without doubt that no mistake existed in regard to the actual division of the nerves. In not a single instance was there the slightest evidence of any increase in the secretion of intestinal fluid, on the contrary the mucous membrane in the majority of cases was pale and somewhat dry in aspect. In no instance was there any affection of the membrane beyond mere small patches of congestion, or of a thin layer of sanguineous exudation, but not more marked than may frequently be observed in *post-mortem* examinations of healthy animals which have died under the influence of chloroform without having been subjected to any operation, and which, if they were in any degree due to the operations in

No increased secretion caused by section of the nerves in any case.

question, were fairly ascribable to the irritation and tendency to inflammation induced by the opening of the abdominal cavity and the handling of its contents.

Nor any increased activity in the intestinal movements.

Increased activity in the intestinal contractions was in no case observed; but as this was not the subject of immediate enquiry, and as the openings in the abdominal parietes were closed as rapidly as possible on the completion of the operation, it may well have occurred and yet have escaped notice.

B.—Section of the Mesenteric Nerves.

Moreau's experiment repeated.

These experiments having failed to achieve the end in view, it was still necessary to repeat Moreau's experiment exactly, as the possibility remained of the semilunar ganglia and solar plexus acting as an independent nervous centre in regulating the secretion of the mucous membrane.

Difficulties of the operation.

The operation in this case, although in some respects apparently much simpler and more easy of performance than that of section of the splanchnic nerves, is yet beset with difficulties peculiar to itself, and which render great care in its performance necessary. The nerves, as is well known, lie close to the vessels, and are of such small size as to render careful dissection necessary in order to secure their thorough division, and it is in this dissection that the difficulty of the operation lies; for, if the vein be much disturbed, or in any way roughly handled, coagulation of its contents occurs at the isolated portion, and is followed by extreme congestion of the mucous membrane and mesentery, with extravasation between the layers of the latter, and effusion of blood into the cavity of the gut to such an extent as to deprive the observation of all value in regard to the point immediately at issue. Cases of this kind will be given in detail farther on, and the matter is mentioned here only with the view of pointing out that the operation is by no means so simple and easy of performance as might be supposed. The circulation in the portion of gut under operation not unfrequently ceases for a time owing to another cause—the arterial coats when irritated often contract to such a degree as to occlude the canal of the vessel. This impediment to the circulation is however of no moment as the irritated coats soon relax, and the current of the blood is rapidly restored.

Sixteen experiments performed.

Sixteen experiments of this kind were performed, the results of which are shown in the following Statement:—

No.	Nature of operation.	Periods of survival after operation.	RESULTS.
1	Moreau's operation	1 hour ...	No result.
2	Ditto ditto	„ ...	Ditto.
3	Ditto ditto	„ ...	Ditto.
4	Moreau's operation combined with injection of organic fluid into the veins.	3 „ ...	Ditto.
5	Moreau's operation	1 „ ...	Ditto.
6	Moreau's operation—2 loops ...	9½ „ ...	Ditto.
7	Moreau's operation with injection of salt and water into the loop.	8½ „ ...	Fluid absorbed; loop empty.
8	Moreau's operation	1 „ ...	Vein plugged. Deep congestion.
9	Ditto ditto	9½ „ ...	Loop distended with blood, and vein occluded.
10	Ditto ditto	10 „ ...	Ditto ditto ditto.
11	Ditto ditto	7½ „ ...	General peritonitis. Loop containing a little strawberry-juice fluid.
12	Moreau's operation—2 loops. *a.*—Injected with water. *b.*—Not injected.	9 „ ...	*a.*—Fluid absorbed—empty. *b.*—Distended with clear serous fluid.
13	Moreau's operation—3 loops. ...	10 „ ...	One loop distended with blood, its vein occluded. Other loops empty.
14	Ditto ditto—2 loops. ... *a.*—Injected with water. *b.*—Not injected.	9¼ „ ...	Both loops empty.
15	Moreau's operation	9¾ „ ...	Contained fluid.
16	Ditto ditto	8 „ ...	Empty. Mucous membrane dry.

General observations regarding this series of experiment.

Before proceeding to give a more detailed account of some of the more remarkable of these cases, and more especially of those exceptional ones in which effusion of fluid really did occur, it may be well to point out a few general facts regarding the entire series. It is remarkable that the animals subjected to operation in no single instance showed any distinct evidences of suffering during the period in which they were allowed to survive the operation. We were naturally averse to keep them alive longer than necessary, and at first only kept them for an hour or two, continuing the administration of chloroform throughout. When, however, such experiments were found only to produce negative results, we were necessarily constrained to prolong life for some time, lest these might have been due to the shortness of the interval elapsing between the operation and death.

Little peritonitis in most cases.

Very little peritonitic action was set up in the majority of instances, and in those in which peritonitis did occur to any extent, it was usually ascribable to an extra amount of handling or injury of the viscera incident on some accident in the course of operation, as, for example, on hæmorrhage from the vessels occurring during the separation of the nerves, or on the plugging of the vein with coagulum, and the resultant extreme congestion of the gut and fold of mesentery supplied by it. When general peritonitis had occurred to any extent, the mucous membrane of the gut presented patches of mucus of a prune-juice colour such as is ordinarily present in such cases, but these were not localised to the loop, the nerves of which had been divided, nor was there any effusion of fluid into the gut.

Illustrative cases.

The following cases have been selected as affording illustrations of the various phenomena observed as results of the operation :—

Operation described.

EXPERIMENT IV (*No.* 6).—A healthy young pariah dog was put under the influence of choloroform, and an incision having been made along the middle line of the abdomen, the cavity was opened and a loop of the small intestine drawn out. The vessels supplying the central portion of this loop were then carefully cleaned, and every thing resembling a nervous filament divided. Ligatures were then applied round the intestine at the terminal twigs of the vessels, the accompanying nerves of which had been divided, and finally a loop of intestine on either side was ligatured. The three ligatured loops were now returned to the abdomen, and another portion of the small intestine having been taken out was treated in exactly the same way. The second set of ligatured loops was next returned to the abdomen, and the wound in the parietes carefully stitched up.

The dog rapidly recovered from the influence of the chloroform, showed no indications of pain, and, 9½ hours after the operation, appeared to be quite cheerful in spite of having six loops of its intestines firmly ligatured, two of which, moreover, had their nervous supply divided.

1st case: no result.

Chloroform was again administered, and continued until death occurred. The abdomen was opened before circulation had ceased, and was found to contain about an ounce of serous fluid, but there were no evidences of general peritonitis. The ligatured loops of intestine were next laid open, but were found in no way to vary from one another, whether their nervous supply had been divided or not. They were all empty, and of a reddish brown appearance internally, due to sanguineous staining of the normal mucus. This staining extended uninterruptedly from the highest ligatured loop to a little beyond the cæcal extremity of the lowest one. Above the upper ligature, the mucous membrane of the gut was pale and somewhat more moist than in the ligatured loops.

EXPERIMENT V (*No.* 8).—A strong healthy pariah dog was put under the influence of chloroform, and three loops of intestine were ligatured as in the preceding experiment, the nerves of the central loop being as before divided whilst those of the lateral loops were left intact. The intestine was then returned to the abdomen and the wound sewed up.

After the lapse of an hour the abdomen was again opened, and the ligatured loops were examined. The vein of the central loop had become occluded with coagulum, which had caused extreme congestion of the corresponding portion of the gut, but beyond this congestion no other difference existed between the central and the two lateral loops.

2nd case: occlusion of the vein: extreme congestion.

Experiment VI (*No.* 9).—A large healthy pariah dog was put under the influence of chloroform, and the division of the nerves of a loop of intestine performed in the usual manner.

Nine hours and a half subsequently the animal was killed with chloroform, and the abdomen opened. The ligatured loop, the nerves of which had been divided, was distended like a sausage, and of an intense black colour. There was extreme extravasation along the lines of the vessels in the corresponding portion of mesentery, and the layers of the latter close to the intestine were widely separated by a wedge-shaped mass of tarry blood. The cavity of the gut was distended with black blood, and the tissues of its walls were infiltrated and thickened with similar fluid. This extreme congestion and extravasation had been caused by the complete occlusion of the vein by coagulum at the site of the section of the nerves.

3rd case: occlusion of the vein: sanguineous effusion.

Experiment VII (*No.* 16).—A small pariah dog was put under the influence of chloroform, and the operation of section of the nerves of a loop of the small intestine performed in the usual way.

After an interval of eight hours, chloroform was again administered until death ensued, and an immediate *post-mortem* examination was then performed.

There was no peritonitis. Not the slightest difference could be detected between the central ligatured loop of intestine in which the nerves had been divided, and the two lateral ones in which they remained intact. The mucous surface was exceptionally dry.

4th case: no result.

A careful dissection was subsequently made of the portion of mesentery, including the divided nerves, and the division was found to have been almost, if not absolutely complete.

Experiment VIII (*No.* 14).—A healthy pariah dog was put under the influence of chloroform, and the nerves of two loops of the small intestine were thoroughly divided. Into one loop (*a*), an ounce of tepid water was then injected, whilst the other loop (*b*) was left empty.

Nine hours and a quarter subsequently the animal was killed, and the intestines were examined at once. The interior of the first loop (*a*) was empty, the mucous membrane being moist and covered with a layer of soft mucus of a sanguineous hue. The interior of the second loop (*b*) was also empty, but the mucous membrane was in this case dry and much less congested than that of the portions of intestine on either side of the ligatures.

5th case: absorption in one loop; non-secretion in the other.

The congested state of the mucous membrane was probably due to the fact that a considerable amount of peritonitis had been caused by the operation.

Experiment IX (*No.* 12).—A large healthy pariah dog was put under the influence of chloroform, and the two nerves of loops of the small intestine were divided in the usual way. Into one loop (*a*) an ounce of water was injected, whilst the other (*b*) was left empty.

Nine hours afterwards the animal was killed, and a *post-mortem* examination was performed at once.

The former loop of intestine (*a*) was empty, and contained merely a little sanguineous mucus, but the latter (*b*) was fully distended with clear serous fluid, containing a few small pale yellowish flocculi. The mucous membrane was soft and of a macerated aspect.

6th case: absorption in one loop; secretion of fluid in the other.

No mistake could have been made as to the identity of the two loops, as they had been carefully distinguished by means of different ligatures, both ends being cut short in one case, whilst one end was left uncut in the other. The flocculi contained in the serous fluid were examined microscopically, and were found to consist of a molecular basis crowded with bioplasts of all sizes, and exactly resembling the flocculi occurring in choleraic dejecta.

Careful dissections of the nerves were made in both cases. In neither were they entirely divided, but the remaining nervous connections were decidedly greater in the second loop (*b*) than in the first (*a*).

EXPERIMENT X (*No.* 15).—A large healthy pariah dog was put under the influence of chloroform, and the nerves of a loop of intestine were divided in the usual way. The animal was killed 9¾ hours afterwards, and a *post-mortem* examination was performed at once.

7th case: secretion of fluid.

The central loop of intestine contained brownish fluid. The mucous membrane of the two lateral loops was very dry, and was coated with a layer of brownish material identical in colour, and probably in nature, with that dissolved in the fluid in the central loop, of which the nerves had been divided. A careful dissection was made of the nerves, and it appeared that, whilst the main trunks had been freely divided, one or two lateral connecting loops of some size remained intact.

Nervous influences regulating intestinal secretion analogous to those regulating secretion of sub-maxillary gland.

The two last cases are peculiarly instructive and noteworthy, inasmuch as they appear to demonstrate a fact which had never previously been experimentally determined, namely, that the relation which the secretion of the small intestines bears to their nervous supply is strictly analogous to that which has long been known to hold in regard to the secretion of the sub-maxillary gland and its nervous supply. It was an ascertained fact that partial paralysis of that gland induced hyper-secretion, whilst total paralysis diminished the secretion, but, in as far as we can ascertain, it was a matter of mere conjectural probability that the same held in regard to the small intestines also. The importance of the determination of this point in reference to the pathology of cholera is very great, as it appears to indicate partial paralysis of the intestines as one of the most important lesions in the disease. What the nature of the nervous filaments, which respectively inhibit and promote the intestinal secretion, is, remains undetermined, and is a problem, the solution of which necessarily involves many difficulties, but it is, at all events, a step in the right direction to ascertain that filaments with these different functions actually do exist.

Mechanical obstructions of circulation cause sanguineous effusion.

There is another point in connection with the pathology of cholera on which some additional light appears to have been thrown by the above investigations. The increased secretion of intestinal fluid in the disease has been ascribed by some to mechanical obstruction to the current of the capillary circulation, but our experiments appear to indicate that mere obstruction to the circulation causes sanguineous effusion and not hyper-secretion.

Time has not as yet sufficed to allow of any extended series of experiments regarding the effect of division of the nerves combined with injections of organic fluids into the circulation, but we trust that the time expended in following out the above preliminary enquiries may not be deemed to have been wasted, seeing that the latter have afforded some additional information in regard to the action of the cause inducing that series of phenomena which in the aggregate constitute cholera.

We cannot conclude this Report without expressing our own sense of the imperfections under which it labours. Both in the planning and execution of the experiments we are well aware that there are no small defects, but we trust that in any estimate which may be formed of them, the very many difficulties incidental to such work in India may not be left altogether out of sight.

APPENDIX D.

REPORT

ON THE

INFLUENCE OF AGE AND LENGTH OF SERVICE IN INDIA

AS ILLUSTRATED IN

THE EUROPEAN ARMY DURING 1871

IN CONTINUATION OF

REPORT EMBRACING THE STATISTICAL DETAILS FROM 1858 TO 1870

APPENDED TO

THE SEVENTH ANNUAL REPORT OF THE SANITARY COMMISSIONER.

BY

JAMES L. BRYDEN, M.D.,

SURGEON, BENGAL ARMY,

STATISTICAL OFFICER ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

CONTENTS.

SECTION I.

STATISTICS OF REGIMENTS IN THE THIRD YEAR OF INDIAN SERVICE, 1866-71.

PAGE.
Characteristics distinctive of the statistics of the body of men in the third year of Indian Service ... 210
Relation of the body to diseases of acclimatisation 210
Diminution of the daily sick-rate, relative to the decrease of the ratios for diseases of acclimatisation ... 210
Diminution of the death-rate, in relation to the same conditions 210
The invaliding is quite up to the standard for the army in general, and excessive in the case of men of 30 and upwards, who lost 94 per 1,000 210
Characteristics of the invaliding among men at the different ages 211
Mortality of men in the third year, in relation to age, and to the composition of the death-rate at the different ages 211
The causes of death in young men, from 18 to 22 211

SECTION II.

THE STATISTICS OF DEATH AND INVALIDING IN THE ARMY OF INDIA IN 1871 IN RELATION TO AGE AND LENGTH OF SERVICE.

(A.)—*The Invaliding of* 1871.

Loss by invaliding in 1871 among men of the Army of India who have broken down at an early period of Indian Service 215
Analysis of the invaliding-rolls of the Bengal Presidency 215
Distribution of the invaliding by age and length of residence 215
Invaliding of men in the first five years of residence who came to India as boys, contrasted with the invaliding of men who were 22 or above, on landing 216
Composition of the invaliding-rate at the different periods of residence 217
Influence of age on the invaliding of 1871 218
Influence of age on the composition of the invaliding-rate 218

(B.)—*The Death-rate of the Armies of the Three Presidencies of* 1871, *and its composition at the different Ages.*

The composition of the death-rate of 1871, and the death-rates at the different ages, are consistent with the standard of 1865-70 220

(C.)—*Enteric Fever in the Army of India in* 1871.

Objections to the generalisation made in last year's report 225
Typhoid is not a disease developed only of late years in newly-arrived regiments and individuals ... 225
The disease in question is recognised as enteric fever by a very large body of independent observers ... 225
Change of climate, the exciting cause in the constitution predisposed to typhoid 225
Typhoid has no geography 225
Radical objections to the suggestion that the typhoid of our cantonments is due primarily to evil local influences 225
The aspect under which typhoid shows itself in our statistics is sufficient of itself to refute all arguments based on the assumed localisation of a specific typhoid poison 226
Distribution of typhoid fever in 1871 in the Military Cantonments of India 227
Typhoid fever in the Native Army in 1871 227
Typhoid fever among the Jail population in 1871 227
Statements taken from the Weekly Returns showing the distribution of Enteric Fever throughout the Cantonments of the three Presidencies 227

SECTION III.

EXPERIENCE OF THE NEW REGIMENTS WHICH CAME TO INDIA IN THE END OF 1870 AND IN THE EARLY MONTHS OF 1871.

Distribution by age of the strength of the new regiments of 1870-71 237
The statistics of these regiments agree in their essential details with what is shown in the standard of 1864-69 237
Composition of the death-rate of the newly-arrived regiments 237

PAGE.
Diseases of the unacclimatised—enteric fever, dysentery, phthisis 238
The typhoid of the young, the great characteristic of the death-rate of the body 238
Composition of the admission-rate compared with the standard of 1864-69 238
Great prevalence of heat fever not inconsistent with a high standard of health in a newly-arrived regiment 238
Experience of H. M.'s 56th Regiment cantoned at Poona 238
Contrast in the case of H. M.'s 89th Regiment cantoned at Cannanore in Southern India ... 238
Experience of H. M.'s 72nd, 65th, and 63rd Regiments belonging to the Army of Bengal ... 239
Characteristics of the invaliding of these five regiments as a body, and the close approximation of details to those of the standard of 1864-69 239

TABULAR STATEMENTS CONTAINED IN THE REPORT.

SECTION I.

Statement showing the decrease of the ratios for diseases of acclimatisation throughout the first three years of Indian Service 210
Diminution in the daily sick-rate, corresponding to the decreased liability to diseases of acclimatisation 210
Diminution of the death-rate 210
Invaliding ratios for men on the third year at different ages 211
Statistics of regiments on the third year of Indian Service, 1866-71 212
Deaths in the third year of service, and the death-rates at the different ages, in the same body ... 213
Invaliding in the third year of service, and the invaliding-rates at the different ages, in the same body 214

SECTION II.

Ages of men of the Army of Bengal invalided at different periods of Indian Service in 1871 ... 216
Causes of invaliding in 1871, in first five years of Indian Service, among men who came to India at 21, or under that age 216
Causes of invaliding in 1871, in first five years of Indian Service, among men who came to India at 22, or above that age 217
Composition of the invaliding-rate at the various periods of residence: invalided from different causes: per cent. of the total invaliding 217
Invaliding of 1871, and the invaliding-rates at the different ages and their composition ... 219
Death-rates in relation to age of the Armies of the three Presidencies compared with the standard of 1865-70 220
Tables showing the deaths of the Armies of the three Presidencies according to age, and the composition of the death-rates at the different ages—
Army of India 221
Army of Bengal 222
Army of Madras 223
Army of Bombay 224
Statement showing to what extent typhoid enters into the composition of the death-rate of the young lads of the Army of India 226

SECTION III.

Distribution by age of the strength of the new regiments of 1870-71 237
Details of the death-rate of the new regiments, contrasted with the same in the death-rate for the army as a body 237
Admission-rates for the diseases of acclimatisation compared with the standard of 1864-69 ... 238
The composition of the invaliding-rate of the new regiments of 1871, compared, as regards the details, with the standard rate of 1864-69 239
General statistics of sickness and mortality in the newly-arrived regiments of 1871 taken as a body, showing the prevalence of the principal diseases in each month of the year 240

APPENDIX D.

REPORT

ON THE

INFLUENCE OF AGE AND LENGTH OF SERVICE

AS AFFECTING THE

MORTALITY AND INVALIDING OF THE EUROPEAN ARMY IN 1871.

INTRODUCTION.

Before going on to consider the effects of age and length of service in India on the men of the European Army, as illustrated in the statistics of 1871, I shall complete the statement giving the statistics of a body of men in the third year of Indian service, for which the data were wanting when the report of last year was published.

The body selected was composed of the regiments and batteries which came to Bengal from England between 1864 and 1869, having an average strength of 14,400. The troops which came in 1869 having finished their third season only in December 1871, the statistics of the body were necessarily left unfinished in the report of 1870.

The invaliding of the same body, after excluding the regiments of 1869, was tabulated, at page 24, in the previous report. This table has been completed by the addition of the invaliding of 1871.

I have found it necessary to append to the Second Section, which contains the statistics of 1871 relating to the influence of age and length of service in India, further details regarding the Enteric Fever of the European Army, and the conditions under which it is manifested. The experience of 1871 fully corroborates the statements made in my report of last year; and the statistics of the entire Army of India, which are here employed, prove that the generalisation deduced from the facts observed in the Bengal Presidency is applicable to the whole extent of our Indian possessions.

I have taken the opportunity to reply very shortly to objections offered to the views promulgated in the report of 1870. These objections are, for the most part, based on a misapprehension of the significance of the statistics, and an inadequate conception of the very important place which Enteric Fever occupies in the medical history of the young European new to India.

Many points of fundamental importance in the study of the constitution of the British Soldier in relation to the agencies which affect him soon after arrival in India, are illustrated in the statistics of regiments in the first year of Indian service. In the Third Section, the statistics of the first twelve months of residence, of five regiments which came to India in the end of 1870 and the beginning of 1871, are given, in continuation of the parallel tabular statements in the report of last year, which had reference to a body of upwards of 14,000 men landed in India between 1864 and 1869. Comparison of the occurrences of each year with a standard, is calculated to teach many instructive lessons; and the statistics of newly-arrived regiments should year by year be separated, for the purpose of rendering the standard of comparison more complete.

SECTION I.

STATISTICS OF REGIMENTS IN THE THIRD YEAR OF INDIAN SERVICE, 1866-71.

Characteristics distinctive of the statistics of the body of men in the third year of Indian service.

Relation of the body to diseases of acclimatisation.

We expected to find in the Table for the Third Year of Service, a diminution of the ratios for the diseases of acclimatisation—Heat fevers, heat apoplexy, and dysentery. The fact is illustrated in the table which follows :—

Diseases of Acclimatisation.	First Year.	Second Year.	Third Year.
Admission-rate per 1,000 of Strength.			
Heat Fevers...	383·9	237·7	156·2
Heat Apoplexy	16·8	4·6	1·6
Dysentery	66·2	47·3	33·8
Death-rate per 1,000 of Strength.			
Heat Fevers...	8·39	4·85	3·20
Heat Apoplexy	8·18	2·01	·70
Dysentery	3·77	1·94	1·60

Pulmonary phthisis, also, which is apt to be developed in the young, as well as to show itself as a disease of deterioration in the older soldier, does not show an increase through these three years:—

Admission-rate per 1,000 of Strength.

	First Year.	Second Year.	Third Year.
Phthisis Pulmonalis	12·2	11·3	9·1

Diminution of the daily sick-rate, relative to the decrease of the ratios for diseases of acclimatisation.

The daily sick-rate of each month is an excellent index of the general health of the different years. I have explained, however, that the exceptionally high ratios shown for the body in its second year were in a great measure to be attributed to the unhealthiness of 1869, and the fact that many of the young regiments were cantoned within the epidemic area of the year :—

Daily Sick-rate per 1,000 of Strength.

Year of Indian Service.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	For the year.
First Year	48·0	47·5	49·1	57·4	61·8	75·3	72·3	75·0	80·7	81·1	65·8	55·4	64 0
Second Year	54·8	53·7	51·5	58·2	68·1	70·1	69·3	71·1	81·1	80·9	67·0	48·1	64 5
Third Year	47·7	51·4	53·7	55·4	57·1	59·3	60·0	63·7	67·7	64·2	56·0	41·9	56·6

The diminution of the sick-rate occurs from May onwards, throughout the months in which excessive ratios may be looked for in the case of newly-arrived troops.

Diminution of the death-rate, in relation to the same conditions.

Above I have shown the chief details in which the death-rate of the three years differs. The death-rate from all causes, excluding cholera, for the three years stands thus :—

Death-rate per 1,000 for all causes, excluding Cholera.

First Year.	Second Year.	Third Year.
32·58	21·28	16·57

The invaliding is quite up to the standard for the Army in general, and excessive in the case of men of 30 and upwards, who lost 94 per 1,000.

Invaliding in the third year does not diminish. The invaliding-ratio is 50·48 per 1,000, against 47·75 in the second year, and 28·83 in the first year of Indian service.

The number of young soldiers in their third year lost by invaliding is undoubtedly large. Out of a total of 725 invalided, nearly 200 were men of

24 years of age or under, and of these 40 were boys of 20 or below. It is, however, the old soldier new to India who furnishes the bulk of invaliding in such a body as that now under consideration; and the body of men above 30 supplied 56 per cent. of all the invaliding of the third year:—

Invaliding at the close of the Third Season in India.

	Young men, 24 and under.	Mature men, 25 to 29.	Old men, 30 and upwards.
Rate per 1,000	27·98	45·10	93·99
Comparative liability in percentage	16·75	27·00	56·25=100

Characteristics of the invaliding among men at the different ages.

How the men at the different ages broke down is shown in the table annexed. That the progress to deterioration with age is marked in the case of almost all the chief causes of loss, may be seen by reference to the table. The contrast in the old, so remarkable in respect to the chief causes of deterioration, is not striking in the case of the ratios for fever, dysentery, and phthisis, diseases from which the young also are liable to suffer.

Nor is there shown the great disparity which we should expect to find in the case of heart disease. But the explanation of the disparity seems to be this, that in the case of the young the heart disease is functional, while in the case of the old it is organic. For when we look to the death table, we find that not one death from heart disease took place among the 6,900 men of 24 and under who furnished 31 cases of invaliding for heart disease. This functional affection in the young it is important to recognise, since it seems to lay the foundation of the heart disease so destructive to the British soldier in India.

Mortality of men in the third year in relation to age, and to the composition of the death-rate at the different ages.

The death table for men in their third year also exhibits the fact, that the liability to death has been three times greater in the old soldier than it has been in the young:—

Died per 1,000 of Strength at the different Ages in the Third Year of Service.

	Under 20.	20 to 24.	25 to 29.	30 and upwards.
All causes	2·87	10·09	20·26	32·68
Excluding Cholera ...	2·87	9·92	17·64	27·77

The age table which follows gives the details for the principal causes of mortality. It shows that the young men have died chiefly from fevers and phthisis, and the old from hepatitis, heart disease, heat apoplexy, and other diseases which experience has shown to be those to which the old soldier is specially liable to succumb.

The causes of death in young men, from 18 to 22.

Up to 22 years of age inclusive, 37 young men died. The chief causes of death in these young soldiers are noted in the following statement:—

Causes of Death.	Æt. 18.	Æt. 19.	Æt. 20.	Æt. 21.	Æt. 22.	Total.
Phthisis Pulmonalis ...	...	...	5	4	1	10
Typhoid Fever ...	...	...	2	3	1	6
Remittent and Continued Fevers ...	...	1	1	2	1	5
Hepatitis ...	...	...	...	4	...	4
Dysentery ...	...	...	1	1	...	2
Pneumonia ...	...	1	...	...	...	1
Cholera ...	...	...	...	...	1	1
All other Causes ...	1	...	1	3	3	8
Total ...	1	2	10	17	7	37

Speaking broadly, nearly one-half of these 37 deaths were occasioned by phthisis or typhoid.* I note this fact here in relation to the parallel fact shown in the death table for 1871 in section II, and also in section III, which treats of the aspects of disease among men and boys who landed in India at the end of 1870 and the beginning of 1871.

---

* Out of the eight deaths noted under "All other causes," one was caused by Tubercular Peritonitis.

STATISTICS OF REGIMENTS IN THE THIRD YEAR OF INDIAN SERVICE, 1866-71.

(*Continuation of the Statistics of the body represented in the two corresponding Tables in the Report of* 1870).

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.*	Causes of Deaths.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	Suicide.	All other Causes.
January ...	14,455	690	47·7	12	·76	1	...	...	...	...	1	...	...	1	...	3	...	1	...	...	...	2	...	3
February ...	14,721	757	51·4	13	·88	...	...	1	4	...	...	1	...	1	...	2	1	1	...	...	...	1	...	1
March ...	14,751	792	53·7	18	1·22	...	...	...	3	...	...	2	2	4	...	...	2	3	...	...	...	2	...	...
April ...	14,523	804	55·4	31	1·31	12	1	...	7	...	...	4	...	1	...	...	2	2	...	...	...	1	...	1
May ...	14,453	826	57·1	22	1·31	3	2	...	3	...	...	...	...	3	...	1	1	2	...	...	1	1	...	5
June ...	14,346	851	59·3	19	1·32	...	...	...	4	3	1	1	...	3	...	...	...	2	...	...	...	...	1	4
July ...	14,281	870	60·9	23	1·61	...	...	...	3	4	...	...	...	7	...	1	1	3	...	...	1	2	...	1
August ...	14,252	908	63·7	33	1·47	12	...	...	5	1	...	5	...	2	...	...	...	2	1	...	...	...	3	2
September ...	14,218	962	67·7	22	1·48	1	...	...	3	1	1	2	...	5	...	1	2	...	...	...	...	2	...	1
October ...	14,180	911	64·2	28	1·97	...	...	1	9	1	1	4	...	4	...	...	1	3	...	...	...	1	1	2
November ...	14,134	792	56·0	21	1·41	1	...	...	2	...	...	2	...	4	...	1	2	5	...	...	...	1	...	3
December ...	14,032	588	41·9	26	1·85	...	...	...	3	...	...	2	...	8	...	1	2	6	...	...	1	1	...	2
						30	3	2	46	10	4	23	2	43	...	10	14	30	1	...	3	14	5	28
						Died per 1,000 of the Average Strength.																		
For the year ...	14,362	813	56·6	268	18·66	2·09	·21	3·34		·70	·28	1·60	·14	2·99	...	·70	·97	2·09	·07	...	·21	·97	·35	1·95

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Augt.	Sept.	Oct.	Nov.	Dec.			
Cholera	1	...	2	26	3	...	...	18	2	...	1	...	53	3·7	56·60
Smallpox	6	...	7	6	3	1	...	...	...	...	...	1	24	1·6	12·50
Fever, Intermittent ...	392	225	266	281	381	325	360	432	562	554	747	267	4,792	333·7	·04
" Remittent and Continued ...	37	40	104	169	228	247	300	297	332	292	144	54	2,244	156·2	2·05
Apoplexy	1	1	...	1	1	8	5	1	3	2	1	...	24	1·6	41·67
Delirium Tremens ...	6	...	8	...	4	6	7	2	3	4	6	3	49	3·4	8·16
Dysentery	25	31	29	38	39	32	35	73	61	54	40	29	486	33·8	4·73
Diarrhœa	31	42	65	81	71	33	87	141	85	65	69	44	814	56·7	·25
Hepatitis	51	51	54	49	65	80	78	62	69	60	41	42	702	48·9	6·12
Spleen Disease ...	7	4	10	1	3	10	5	5	6	7	4	1	63	4·4	...
Respiratory Diseases ...	88	90	65	94	77	65	53	55	63	54	74	66	844	58·8	1·18
Phthisis Pulmonalis ...	5	7	10	9	12	10	11	16	17	16	9	8	130	9·1	23·08
Scurvy	...	...	1	...	...	...	...	1	...	2	...	...	4	·3	...
Rheumatism ...	64	69	95	73	81	81	95	101	82	74	61	55	931	64·8	·51
Venereal Diseases ...	345	286	394	277	331	261	210	208	173	236	218	230	3,169	220·7	
Eye Diseases ...	20	29	37	31	30	33	45	47	41	41	21	17	395	27·5	
Abscess and Ulcer ...	95	77	89	95	96	136	158	137	105	111	93	77	1,269	88·4	
Wounds & Accidents ...	97	70	107	112	103	83	76	59	60	90	81	102	1,040	72·4	
All other causes ...	158	164	198	181	202	208	260	242	199	190	163	132	2,297	159·9	
	1,429	1,186	1,541	1,524	1,730	1,619	1,785	1,897	1,863	1,852	1,776	1,128	19,330		
	Admitted per 1,000 of the Average Strength in each Month.														
	98·9	80·6	104·5	104·9	119·7	112·9	125·0	133·1	131·0	130·6	125·7	80·4	1345·9		

---

* In the monthly ratios Cholera is excluded.

Distribution, according to Age, of the Strength of Regiments in the Third Year of Indian Service, 1866-71.

STRENGTH AT BEGINNING OF THIRD YEAR.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
					3,458	
14,946	1,018	5,850	4,590	2,362	944	152

Causes of Deaths in the Third Year of Service in India, and the Death-rates at the different Ages.

CAUSES OF DEATH.	NUMBER OF DEATHS.				DIED PER 1,000 OF THE STRENGTHS ABOVE STATED.				RATIO OF LIABILITY ON PERCENTAGES.				
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	TOTAL.
Cholera	...	1	12	17	...	·17	2·62	4·91	...	2·21	34·03	63·76	100
Fevers	1	18	16	13	·96	3·08	3·48	3·75	8·52	27·33	30·88	33·27	100
Heat Apoplexy	...	1	4	5	...	·17	·87	1·45	...	6·83	34·94	58·23	100
Delirium Tremens	...	...	1	3	...	...	·22	·85	...	...	20·18	79·82	100
Dysentery and Diarrhœa	...	3	7	15	...	·51	1·53	4·34	...	8·00	23·98	68·02	100
Hepatitis	...	8	16	19	...	1·37	3·48	5·49	...	13·25	33·66	53·09	100
Phthisis Pulmonalis	...	13	10	7	...	2·22	2·18	2·03	...	34·53	33·90	31·57	100
Heart Diseases	...	...	4	10	...	...	·87	2·90	...	...	23·08	76·92	100
All other causes	2	15	23	24	1·91	2·57	5·01	6·94	11·63	15·64	30·49	42·24	100
ALL CAUSES	3	59	93	113	2·87	10·09	20·26	32·68	4·36	15·31	30·74	49·59	100
ALL CAUSES, EXCLUDING CHOLERA	3	58	81	96	2·87	9·92	17·64	27·77	4·93	17·04	30·31	47·72	100

Ages of men of the Army of Bengal Invalided at different periods of Indian Service, 1871.

YEARS OF AGE.	IN FIRST FIVE YEARS OF INDIAN SERVICE.					1 to 5 years.	6 to 10 years.	10 to 20 years.*
	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.			
17	...	1	...	...	...	1	...	...
18	2	1	2	...	...	5	...	...
19	25	1	3	1	...	30	...	...
20	30	6	...	2	1	39	...	...
21	28	18	3	3	1	53	...	...
22	13	26	19	10	...	68	2	...
23	9	10	18	11	3	51	2	...
24	16	14	24	28	10	92	10	...
25	9	15	15	22	13	74	16	...
26	10	11	9	17	10	57	20	...
27	4	11	11	16	9	51	18	2
28	6	9	18	11	6	50	36	...
29	3	7	9	15	4	38	44	1
30	3	3	3	10	6	25	25	8
31	3	6	7	11	12	39	35	21
32	4	6	3	9	4	26	31	31
33	3	3	5	4	7	22	22	35
34	4	5	4	7	2	22	32	31
35	1	3	8	9	9	30	16	30
36	3	5	8	5	5	26	16	25
37	1	...	7	11	4	23	13	21
38	...	4	1	4	6	15	14	23
39	1	3	3	4	3	14	16	18
40	2	2	2	1	3	10	6	22
41	...	...	2	1	1	4	3	10
42	...	2	...	1	...	3	3	2
43	...	...	...	...	...	...	3	6
44	...	...	...	...	...	...	1	4
45	...	...	...	...	...	...	1	2
46	...	...	...	...	...	...	...	1
47	...	...	...	...	...	...	...	3
48	...	...	...	...	...	...	...	1
52	...	...	...	1	...	1	...	1
55	...	...	...	...	...	...	...	1
	180	172	184	214	119	869	385	299

* Five men only above 20 years in India were invalided in 1871.

Invaliding of men in the first five years of residence who came to India as boys contrasted with the invaliding of men who were 22 or above on landing.

Out of 869 invalids of 1871, who broke down in the first five years, 345 were men who had come to India as boys, that is to say, all were 21 or younger when they landed. Of these 345, 98 were invalided after one season of residence, 63 after two seasons, 69 after three seasons, 77 after four seasons, and 38 after five seasons.

Causes of Invaliding in 1871 *in first five years of Indian Service among men who came to India at* 21 *or under that age.*

	FIRST YEAR	SECOND YEAR.	THIRD YEAR.	FOURTH YEAR.	FIFTH YEAR.	TOTAL.	Invalided per cent. of total invaliding
	22 and under.	23 and under.	24 and under.	25 and under.	26 and under.		
Fevers	1	8	6	5	1	21	6·09
Phthisis Pulmonalis ...	8	3	13	7	7	38	11·02
Rheumatism ...	2	4	...	3	6	15	4·34
Syphilis	...	3	3	4	4	14	4·06
Epilepsy and Brain Affections	9	...	3	4	1	17	4·93
Mania	2	...	...	1	1	15	4·34
Melancholia	...	1	...	1	...		
Dementia	5	...	1	3	...		
Valve Disease of Heart ...	6	5	5	2	2	72	20·87
Hypertrophy of Heart ...	8	4	4	5	1		
Aneurism	...	...	...	...	...		
Palpitation	10	7	5	7	1		
Bronchitis	5	...	1	1	1	8	2·32
Dysentery	5	2	2	2	2	13	3·77
Hepatitis	13	9	10	14	5	51	14·78
Spleen Disease ...	1	...	1	...	...	2	·58
Anæmia and General Debility	12	5	8	12	2	39	11·30
All other causes ...	11	12	7	6	4	40	11·60
TOTAL ...	98	63	69	77	38	345	100·00

Out of 524 who came to India when over 22 years of age, 82 were invalided in the first season, 109 in the second, 115 in the third, 137 in the fourth, and 81 in the fifth:—

Causes of Invaliding in first five years of Indian service among men who came to India at 22 or above that age.

	1st Year.	2nd Year.	3rd Year.	4th Year.	5th Year.	Total.	Invalided per cent. of total invaliding.
	23 and above.	24 and above.	25 and above	26 and above.	27 and above.		
Fevers	3	2	7	12	4	28	5·36
Phthisis Pulmonalis ...	9	14	7	13	2	45	8·59
Rheumatism ...	...	12	5	9	7	33	6·30
Syphilis	3	10	3	8	6	30	5 72
Epilepsy and Brain Affections	4	3	2	2	2	13	2·48
Mania	6	...	...	1	1	23	4·39
Melancholia... ...	...	1	2	...	1		
Dementia	5	1	5	...	...		
Valve Disease of Heart ...	12	1	6	4	2	60	11·45
Hypertrophy of Heart ...	2	1	1	2	2		
Aneurism	1	1	1	...	...		
Palpitation	3	2	4	9	6		
Bronchitis	4	5	1	4	5	19	3·62
Dysentery	3	7	8	4	5	27	5·15
Hepatitis	10	14	25	28	16	93	17·75
Spleen Disease ...	1	1	...	...	...	2	·38
Anæmia and General Debility	9	19	27	27	13	95	18·13
All other causes ...	7	15	11	14	9	56	10·69
Total ...	82	109	115	137	81	524	100·00

About 55 per cent. of all invaliding is comprehended under the heads General Debility from the effects of climate, Hepatitis, Heart Disease, and Phthisis. Towards the invaliding of the two classes to which the preceding tables refer, these four causes contribute in the first table 58 per cent., and in the second 56 per cent. of the total. Taking both together, in men of five years of service and under, 57 per cent. of the total is entered as due to these four causes of invaliding.

The class of men who came young to India gives a higher ratio for Heart Affections and Phthisis; in those who came older, General Debility and Hepatitis are shown in excess:—

Chief Causes of Invaliding.	Men who came to India at 22 or under.	Men who came to India at 23 or above.
Phthisis	11	9
Heart Affections	21	11
Hepatitis	15	18
General Debility	11	18
Per cent. of Total Invaliding ...	58	56

Composition of the invaliding-rate at the different periods of residence.

In the period from six to ten years of Indian service these causes appear to contribute least to the total invaliding:—

Chief Causes of Invaliding.	1 to 5 years.	6 to 10 years.	Above 10 years.
Phthisis	10	7	4
Heart Affections	15	6	8
Hepatitis	17	15	16
General Debility	15	19	28
Per cent. of Total Invaliding ...	57	47	56

The statement which follows shows how this percentage is supplemented so as to make up the hundred :—

Invalided per cent. of the total invaliding at different periods of service in India.

Causes of Invaliding.	Periods of Indian Service.			Total at all periods.
	1 to 5 years.	6 to 10 years.	Above 10 years.	
Fever	5·64	7·53	7·70	6·50
Phthisis Pulmonalis	9·55	7·01	4·35	7·92
Syphilis	5·06	8·31	7·02	6·25
Rheumatism	5·53	6·24	8·70	6·31
Epilepsy and Brain Affections	3·45	3·38	2·34	3·21
Mania	4·37	4·15	1·33	3·74
Melancholia				
Dementia				
Valve Disease of Heart	15·19	6·49	7·70	11·59
Hypertrophy of Heart				
Aneurism				
Palpitation				
Bronchitis	3·11	1·82	3·01	2·77
Dysentery	4·60	6·49	1·67	4·51
Hepatitis	16·57	15·07	16·05	16·10
Spleen Disease	·46	1·56	·33	·71
Anæmia and Debility	15·42	18·96	27·76	18·67
All other causes	11·05	12·99	12·04	11·72
Total ...	100·00	100·00	100·00	100·00

Influence of age on the invaliding of 1871.

Arranging the invaliding of the Bengal Army according to the ages of invalids, the four great causes of invaliding above noted continue to represent from 50 to 60 per cent. of the loss. Men under 24 give a proportion of 57 per cent.; men from 25 to 29, 52 per cent.; and men above 30, 55 per cent. out of the total invalided from all causes.

The actual loss by invaliding is, as usual, very different at the different ages. The invaliding ratios of 1871 for the Army of Bengal, approach very nearly the standard of 1865-70, except in the case of the oldest class, which gives a loss of 68 per 1,000 against 78 shown in the standard :—

	Invalided per 1,000 of Strength.		
	Under 24.	25 to 29.	30 and upwards
Army of Bengal, 1871	25·97	40·42	68·14
„ Standard of 1865-70... ...	26·55	39·74	78·34
Army of India, 1871	24·87	38·58	63·78

Influence of age on the composition of the invaliding-rate.

The chief components of the invaliding-rate of the Bengal Army for 1871, and the proportions in which these have caused the loss at the different ages, are entered in the table annexed. In the case of the young men below 24, the same phenomenon to which I have already called attention, in speaking of young men who have broken down in their third year of service, is again apparent. This class, which out of a strength of 22,700 in the Army of India, gives but one death from heart disease, shows here in invaliding a loss of 5·44 per 1,000 from the same cause.

Distribution according to Age of the Strength of the Army of the Bengal Presidency at the beginning of 1871.

TOTAL STRENGTH.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
				11,638		
35,300	3,010	10,582	10,070	8,205	3,000	433

Invaliding of 1871, *and the Invaliding-rates at the different Ages.*

CAUSES OF INVALIDING.	NUMBER INVALIDED AT THE DIFFERENT AGES.				INVALIDING-RATE PER 1,000 OF THE STRENGTHS ABOVE STATED.			RATIO OF LIABILITY IN PERCENTAGES.			
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 24.	25 to 29.	30 and upwards.	Under 24.	25 to 29.	30 and upwards.	TOTAL.
Fevers	......	20	29	53	1·47	2·88	4·55	16·52	32·36	51·12	100
Phthisis Pulmonalis	7	27	41	50	2·50	4·07	4·30	23·00	37·44	39·56	100
Rheumatism	2	8	21	57	·74	2·09	4·90	9·57	27·04	63·39	100
Syphilis	......	17	31	49	1·25	3·08	4·21	14·64	36·07	49·29	100
Epilepsy and Brain Affections	2	17	10	19	1·40	·99	1·63	28·39	33·88	37·73	100
Mental Affections	2	14	21	21	1·18	2·09	1·80				
Heart Disease and Palpitation	6	68	47	59	5·44	4·67	5·07	35·84	30·76	33·40	100
Bronchitis	2	7	10	24	·66	·99	2·06	17·79	26·68	55·53	100
Dysentery	1	13	22	32	1·03	2·18	2·75	17·28	36·58	46·14	100
Hepatitis	2	47	76	125	3·61	7·55	10·74	16·48	34·48	49·04	100
Spleen Disease	1	3	1	6	·29	·10	·52	......	......	......	......*
General Debility	7	37	46	201	3·24	4·57	17·27	12·92	18·22	68·86	100
All other Causes	4	39	52	97	3·16	5·16	8·34	19·63	29·94	50·43	100
ALL CAUSES	36	317	407	793	25·97	40·42	68·14	19·30	30·05	50·65	100
STANDARD OF 1865-70	......	......	......	......	26·55	39·74	78·34	18·36	27·48	54·16	100

* With "all other causes."

(B).—THE DEATH-RATE OF 1871 AND ITS COMPOSITION AT THE DIFFERENT AGES.

The composition of the death-rate of 1871 and the death-rates at the different ages are consistent with the standard of 1865-70.

The death-rate for men above 30 has been consistently double that of men below that age in each Presidency. In the Army of Bengal, the favorable character of the season is shown in a diminution of the death-rates, when compared with the standard, at all ages, except in the case of boys, who have suffered heavily from enteric fever:—

Died per 1,000 of Strength at the different Ages, excluding Cholera.

	Under 20.	20 to 24.	25 to 29.	30 and upwards.
Bengal Army, Standard of 1865-70	7·61	13·67	17·41	29·94
Army of Bengal, 1871	8·31	10·96	13·81	26·98
„ „ Madras, 1871	3·57	11·48	11·44	28·13
„ „ Bombay, 1871	5·47	9·67	11·44	23·76
„ „ India, 1871	6·62	10·77	12·97	26·68

The details of this general death-rate are given in the four tables which follow. It is only necessary to remark that the details in the tables are consistent for the three Armies, and that they agree generally with what was exhibited in the standard for Bengal of 1865-70.

Distribution according to Age of the Strength of the Army of India at the beginning of 1871.

TOTAL STRENGTH.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
					18,706	
56,964	5,591	17,091	15,576	12,922	4,938	846

Deaths of 1871, *and the Death-rates at the different Ages.*

CAUSES OF DEATHS.	NUMBER OF DEATHS AT THE DIFFERENT AGES.				DIED PER 1,000 OF THE STRENGTHS ABOVE STATED.				RATIO OF LIABILITY IN PERCENTAGES.				
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	TOTAL.
Cholera	...	9	20	33	...	·53	1·28	1·76	...	14·85	35·85	49·30	100
Remittent and Continued Fevers	6	29	31	28	1·07	1·70	1·99	1·50	17·10	27·15	31·79	23·96	100
Enteric Fever (True)	18	51	22	4	3·22	2·98	1·41	·21	41·18	38·11	18·03	2·68	100
Apoplexy	1	9	13	26	·18	·53	·84	1·39	6·12	18·03	28·57	47·28	100
Delirium Tremens	...	...	5	17	...	...	·32	·91	...	...	26·02	73·98	100
Dysentery and Diarrhœa	2	21	18	42	·36	1·23	1·16	2·25	7·20	24·60	23·20	45·00	100
Hepatitis	1	20	36	99	·18	1·17	2·31	5·29	2·01	13·07	25·81	59·11	100
Phthisis Pulmonalis	1	14	15	52	·18	·82	·96	2·78	3·80	17·30	20·25	58·65	100
Heart Disease	...	1	17	74	...	·06	1·09	3·96	...	1·18	21·33	77·49	100
All other causes	8	39	45	157	1·43	2·28	2·89	8·39	9·54	15·21	19·28	55·97	100
ALL CAUSES	37	193	222	532	6·62	11·30	14·25	28·44	10·92	18·65	23·51	46·92	100
ALL CAUSES, EXCLUDING CHOLERA ...	...	184	202	499	6·62	10·77	12·97	26·68	11·61	18·88	22·74	46·77	100

Distribution according to Age of the Strength of the Army of Bengal at the beginning of 1871.

Total Strength.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
					11,638	
35,300	3,010	10,582	10,070	8,205	3,000	433

Deaths of 1871, *and the Death-rates at the different Ages.*

Causes of Deaths.	Number of Deaths at the different Ages.				Died per 1,000 of the Strengths above stated.				Ratio of Liability in Percentages.				Total.
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	
Cholera	...	7	8	10	...	·66	·79	·86	...	28·57	34·20	37·23	100
Remittent and Continued Fevers	5	24	25	21	1·66	2·27	2·49	1·80	20·19	27·62	30·29	21·90	100
Enteric Fever (True)	15	29	17	2	4·98	2·74	1·69	·17	51·98	28·60	17·64	1·78	100
Apoplexy	...	6	8	14	...	·57	·79	1·20	...	22·27	30·86	46·87	100
Delirium Tremens	...	...	1	8	...	...	·10	·69	...	...	12·66	87·34	100
Dysentery and Diarrhœa	2	10	13	20	·67	·94	1·29	1·72	14·50	20·35	27·92	37·23	100
Hepatitis	...	15	25	58	...	1·42	2·49	4·98	...	15·97	28·01	56·02	100
Phthisis Pulmonalis	...	9	8	38	...	·85	·79	3·27	...	17·31	16·09	66·60	100
Heart Disease	...	1	11	45	...	·09	1·09	3·87	...	1·78	21·58	76·64	100
All other causes	3	22	31	108	1·00	2·08	3·08	9·28	6·48	13·47	19·95	60·10	100
All causes	25	123	147	324	8·31	11·62	14·60	27·84	13·32	18·63	23·41	44·64	100
All causes, excluding Cholera ...	25	116	139	314	8·31	10·96	13·81	26·98	13·84	18·25	22·99	44·92	100
Standard of 1865-70	...	...	...	...	7·61	13·67	17·41	29·94	11·09	19·92	25·37	43·62	100

Distribution according to Age of the Strength of the Army of Madras at the beginning of 1871.

Total Strength.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
					3,911	
10,703	1,121	2,787	2,884	2,719	996	196

Deaths of 1871, *and the Death-rates at the different Ages.*

Causes of Deaths.	Number of Deaths at the different Ages.				Died per 1,000 of the Strengths above stated.				Ratio of Liability in Percentages.				Total.
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	
Cholera	...	2	12	22	...	·72	4·16	5·62	...	6·86	39·62	53·52	100
Remittent and Continued Fevers	...	3	4	2	...	1·08	1·39	·51	...	36·24	46·64	17·12	100
Enteric Fever (True)	1	11	3	1	·89	3·94	1·04	·26	14·52	64·28	16·97	4·23	100
Apoplexy...	...	...	3	5	...	...	1·04	1·28	...	...	44·83	55·17	100
Delirium Tremens	...	...	1	6	...	...	·34	1·53	...	...	18·18	81·82	100
Dysentery and Diarrhœa	...	8	3	15	...	2·87	1·04	3·84	...	37·03	13·42	49·55	100
Hepatitis	1	2	9	26	·89	·72	3·12	6·65	7·82	6·33	27·42	58·43	100
Phthisis Pulmonalis	...	1	2	8	...	·36	·69	2·04	...	11·65	22·33	66·02	100
Heart Disease	...	...	4	17	...	...	1·39	4·35	...	...	24·22	75·78	100
All other causes	2	7	4	30	1·79	2·51	1·39	7·67	13·40	18·79	10·40	57·41	100
All causes...	4	34	45	132	3·57	12·20	15·60	33·75	5·48	18·71	23·95	51·83	100
All causes, excluding Cholera ...	4	32	33	110	3·57	11·48	11·44	28·13	6·54	21·02	20·94	51·50	100

Distribution according to Age of the Strength of the Army of Bombay at the beginning of 1871.

TOTAL STRENGTH.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
				3,157		
10,961	1,460	3,722	2,622	1,998	912	217

Deaths of 1871, and the Death-rates at the different Ages.

CAUSES OF DEATHS.	NUMBER OF DEATHS AT THE DIFFERENT AGES.				DIED PER 1,000 OF THE STRENGTHS ABOVE STATED.				RATIO OF LIABILITY IN PERCENTAGES.				
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	TOTAL.
Cholera	...	...	...	1	...	...	...	·32	...	...	...	100·00	100
Remittent and Continued Fevers	1	2	2	5	·68	·53	·76	1·58	19·15	14·93	21·41	44·51	100
Enteric Fever (True)	2	11	2	1	1·37	2·96	·76	·32	25·32	54·71	14·05	5·92	100
Apoplexy	1	3	2	7	·68	·81	·76	2·22	15·21	18·12	17·00	49·67	100
Delirium Tremens	...	...	3	3	...	...	1·15	·95	...	...	54·76	45·24	100
Dysentery and Diarrhœa	...	3	2	7	...	·81	·76	2·22	...	21·38	20·05	58·57	100
Hepatitis	...	3	2	15	...	·81	·76	4·75	...	12·82	12·03	75·15	100
Phthisis Pulmonalis	1	4	5	6	·68	1·07	1·91	1·90	12·23	19·24	34·36	34·17	100
Heart Disease	...	...	2	12	...	...	·76	3·80	...	...	16·67	83·33	100
All other causes	3	10	10	19	2·06	2·68	3·82	6·02	14·13	18·38	26·20	41·29	100
ALL CAUSES	8	36	30	76	5·47	9·67	11·44	24·08	10·80	19·09	22·58	47·53	100
ALL CAUSES, EXCLUDING CHOLERA ...	8	36	30	75	5·47	9·67	11·44	23·76	10·87	19·21	22·73	47·19	100

Arrangements have been made to show in future the length of Indian service in each fatal case. This information cannot be given for 1871, as the death-rolls of Bengal and Madras are deficient in respect to the length of residence of men who die. The tables showing the causes of death in new regiments, in the first, second, and third years of service, afford details which may be taken as representative for larger bodies of a similar length of residence.

C.—Enteric Fever in the Army of India in 1871.

Objections to the generalisation made in last year's report.

For the first time, I have separated enteric fever from other fevers in these returns. The correctness of the generalisations regarding typhoid fever, based on the records of the past fifteen years, have been called in question in various quarters, since these were published in my report of last year. I do not think it worth while to reply at length to each of the objections made. Not one of the objections made affects in the least the stability of the views I formerly expressed. The facts cannot be denied, and hence suggestions rather than objections are offered in reply.

Typhoid is not a disease developed only of late years in newly-arrived regiments and individuals.

It is stated that my record of typhoid universally distributed throughout the Bengal Presidency from 1858 to the present time, introduces something that is new, and that typhoid had no existence before the influx of troops in the mutiny years; and this, notwithstanding that I took the trouble to point out that in the ten years preceding 1858, the pathological phenomenon in question was present, just as in the subsequent years. The opportunities for generalisation have enormously increased of late years, from the larger amount of material capable of being affected by typhoid having been brought under observation. Before the mutiny years, reliefs from England were rare, and the number of recruits landed annually was small. But that typhoid did not occur under the same conditions in former years, is an assertion which is not borne out by the investigation of regimental records. Going back for thirty years, I have been able to extract from these records typical descriptions of typhoid. Mr. Hanbury does not describe the typhoid of his young men as something new, while writing regarding the fever of 1859; he tells us that on going over the records of Deesa, as far back as 1841, the same history will be found.

The disease in question is recognised as enteric fever by a very large body of independent observers.

Next the question is raised, whether the disease described be really typhoid fever. To this it is only necessary to reply that the best clinical observers are satisfied that the typhoid of our European army of India is identical in every feature with the enteric fever observed and studied in other countries; and if it were worth while, I could quote the clinical experience of both general and regimental hospitals in evidence. In the cases which I have appended, the individual medical officers are responsible for the diagnosis. As a statistical reporter, I accept and record their diagnosis, knowing it to be true. And I am well aware that the tendency is to caution on framing the diagnosis in these cases; many cases escape record, because of the unwillingness of the medical officers to return cases as typhoid fever, which might possibly be fever of some other variety.

Change of climate the existing cause in the constitution predisposed to typhoid.

Much unnecessary argument has been entered into, apparently for the purpose of demonstrating that heat alone does not cause the typhoid lesion and its sequelæ. The expression which I used was "the influence of heat." Heat and Heat Influence are two things very distinct. As applied to India, Heat Influence is nearly an equivalent for "Effects of Climate"; and it was in this wide sense that I used the expression. But it is not consistent with my conception of the conditions which bring about typhoid in the young, that this typhoid should occur in the hot months only. Exposure to an Indian climate in the cold season is often a sufficiently powerful exciting cause in individuals predisposed to typhoid; and I am not surprised to find in newly-arrived regiments, the change from Ireland in September to Cannanore or Hazareebaugh in November followed by a severe outbreak of typhoid, as was the case in 1871-72. It is quite possible that the suddenness of the change to a tropical climate since the adoption of the overland route may of late years have been an additional predisposing cause to the prevalence of typhoid. I speak of this merely as an additional cause; for many regiments which came to India from 1864 onwards before this service was in operation, suffered heavily in the first year. It is for the local observer to tell us in what respects the constitutions of the lads attacked differ from those of the young men who pass through the process of acclimatisation under similar conditions without falling into typhoid.

Typhoid has no geography.

The fact that typhoid has no geography does not, so far as I appreciate its significance, afford evidence in favour of the etiological view which holds that every manifestation of typhoid is due to a specific local poisoning. On the contrary, when I find a young French army sent into Algeria, a young American army thrown into the Southern States, or young British regiments newly landed on the Mediterranean stations or at the Cape as in China and Japan, all manifesting a powerful predisposition to typhoid, my conclusion is that in the phenomenon we have evidence of the operation of one common cause, which is capable of originating typhoid in each case under favorable circumstances. And when I come to enquire in the light thrown upon the subject by experience in India, whether local poisoning suffices to explain the predisposition and the sequel in disease, I find it necessary to seek an etiology far wider in its range.

Radical objections to the suggestion that the typhoid of our cantonments is due primarily to evil local influences.

It is suggested that an analysis of the aggregate of cases upon which my generalisation regarding the etiology of Indian typhoid is based would not bear out my conclusion; and that the study of the individual cases would result in bringing the whole within the compass of the etiological doctrine which assigns to every case a specific poisoning of locality.

I have no desire to hold the opinion that the seeds of typhoid exist in every cantonment in India, and that we have only to provide proper material to ensure the development of this disease. All my experience points in the opposite direction. Sitting down seven years ago to call the attention of the Sanitary Commission to the important question of the etiology of the typhoid of India, I pointed out that no station could be too carefully selected for occupation which was to be occupied by young troops, and that with every precaution typhoid might be developed. I repeated the same thing after two years of further experience, in 1867, in a communication addressed to the Deputy Adjutant General of the Army, who desired to be informed why and how old and young men died in India. And I have since then, in various publications, brought to notice further illustrations, all suggestive of the fact that local conditions are not those which determine that young men newly-arrived shall fall into typhoid.

Writing in July 1865, it was impossible for me to foresee that regiments coming to India five years or more after the date of my report, should develop typhoid because of the unhealthy conditions existing in our healthiest cantonments. Writing last year on this same subject, I was at the time ignorant of the fact that, of the five regiments which had come to India six months before, three had suffered heavily from typhoid. The 70th Regiment, which has suffered in 1872, was, when I wrote, in England.

When, in 1865, I wrote that my study of the etiology of Indian typhoid led me to conclude that in the future young regiments would suffer, I did not argue that such would be the case, because of the evil sanitation of our cantonments; and hence when, in the last three years, in our cantonments of Rawulpindee, Meean Meer, Jullundur, Agra, Lucknow, and Hazareebaugh, the 6th, 70th, 85th, 92nd, 65th, 17th, and 63rd Regiments have all been severely visited by typhoid, I do not fall back for an explanation of the fact upon the existence of local conditions calculated to determine typhoid in the predisposed. Whether such conditions exist, or do not, is beyond the argument.

My paper had no such object as to weigh controversially the results of my observation in India against the results of observation at home; nor did I suggest that the etiology of Enteric Fever was comprehended on either doctrine, or in both combined. What I have shown is, that the spontaneous origin of Enteric Fever is a fact. But while I have done so, I have repeated the caution contained in my report of 1867, that a zymotic element is generated when Typhoid is so developed, and that every case of Enteric Fever, should be looked on as a focus from which Enteric Fever may spread. The question of the spread of typhoid subsequent to its development has nothing to do with that of its spontaneous origin. Observation leads me to conclude that this typhoid may spread—whether by direct contagion or otherwise I do not propose to discuss; and the Sanitary Officer will not neglect to apply to cases occurring in India the same general principles which direct his measures at home.

The aspect under which typhoid shows itself in our statistics is sufficient of itself to refute all arguments based on the assumed localisation of a specific typhoid poison.

I have taken it for granted that young men, rather than old men, fall into typhoid, because of the activity in the young of the special system and function involved. The doctrine that, without the introduction of typhoid excretory matter in some shape into the systems of these young men, they are safe from the development of the specific fever, does not, however, meet all the facts of the case. My observation tends to teach, that, while it may be perfectly true that typhoid is in many instances so propagated, the specific lesion and its attendant fever are capable of development without the application to the system of a poison elaborated elsewhere; and that the etiology of typhoid is not comprehended within the limits to which, of late years, the tendency has been to seek to confine it.

But standing out far above all criticism is the great truth, not that young men die from enteric fever in India, but that enteric fever is the one disease from which young men die. In my report of last year I was unable to show to the full to what extent this statement was true. The death-rolls of 1871 for the army of India give the following results. Beside the figures for 1871, I place the deaths of the young men of the Bengal Army of 20 and under who died between 1865 and 1870; and it will be understood in regard to the fevers shown in this portion of the statement that the proportion of typhoid is as high as that shown in the figures for 1871:—

DEATHS OF BOYS OF 20 AND BELOW, 1865-70.		20 AND BELOW, 1871.		21-23, 1871.	
(Army of Bengal.)		(Army of India.)		(Army of India.)	
Continued Fever ...	113	Typhoid 40	56	... 22	36
Heat Apoplexy ...	29	Other Fevers 16 ...		... 14	
Dysentery ...	16	Heat Apoplexy ...	2	...	5
Phthisis Pulmonalis ...	13	Dysentery ...	4	...	13
Hepatitis ...	5	Phthisis Pulmonalis	3	...	6
Heart Disease ...	4	Hepatitis ...	1	...	11
All other causes ...	27	Heart Disease ...	...	...	1
		All other causes ...	8	...	29
TOTAL ..	207	TOTAL ...	71	TOTAL ...	101

Upwards of 50 per cent. of all deaths in young soldiers, if cholera deaths be excluded are attributable to typhoid. This is what the statistics of the past seven years teach; and the fact is one of extreme interest and importance, which is not to be explained away by assuming that the disease in question is not typhoid, or that the extent of its prevalence has been exaggerated on some theoretical consideration.

I have thought it right to allow the different medical officers who have seen the disease in 1871 speak each for himself. The monotony of the quotations may be excused, since it has been suggested that the statistical officer, and not the observer of the case, recognises the fever of the young to be enteric fever.

Distribution of typhoid fever in 1871 in the Military Cantonments of India.

These quotations refer to enteric fever in forty-four of our military stations in India in 1871. The names of the different medical officers who have observed the disease are appended to these statements. In various cantonments several corps have furnished cases, so that the total of cases and deaths is distributed over a very large number of independent bodies of men. Distributed over forty-eight cantonments, the average of admissions is a little over 4 for each; and as the admissions occurred in sixty-four different corps, we have an average of 3 only for different independent bodies.

Admissions from typhoid occurred in every part of India. The quotations carry us from Scinde and Rajpootana to Southern India and Burmah; and scarcely one cantonment of Bengal, from Fort William to Peshawur, fails to furnish its cases.

Typhoid fever in the Native Army in 1871.

Against 207 cases and 92 deaths shown in the Tables for the European Army, the Native Army, of similar strength, furnished 1 admission and 1 death; and this one case has been published at length, in evidence, apparently, that the comparative exemption which I claimed for the Native Army did not really exist. As I stated in my report of last year, I have no wish to generalise on this fact of the striking immunity of the Native population of India without further data derived from authentic sources. I have placed on record the facts which the study of the statistics of our types brings before us, and I shall be glad to place against previous observation any authentic statistics of typhoid which the returns may afford. Regarding the solitary case in the Native Army in 1872, which Assistant Surgeon Lyons diagnoses as a case of typhoid, he appends to the weekly returns recording the death the following remarks:—

"The case is a remarkable instance of protracted typhoid fever. The patient was admitted on 15th July. From the 15th to the 22nd the fever was intermittent, and then to the 27th July, or thereabouts, it was continued. The fever relapsed on 25th August, and from that date to his death, on 25th September, it was remittent.

"Enlargement of the spleen was noted on admission; its size increased during his illness, but was not at any time considerable. Latterly pneumonia was observed.

"*Post-mortem* examination was not permitted."

If local conditions alone determined that the European soldier should develop typhoid, we should look for the operation of the same in the case of the Native soldier. As far as statistical experience teaches, the existing local conditions do not affect the Native soldier in such a way as to cause him to fall into enteric fever. It seems more logical to infer that the local evil influences assumed to cause typhoid have no existence, than to conclude that the young British soldier localises a poison which has no effect on the Native sepoy of the same age.

Typhoid fever among the Jail population in 1871.

Out of a Jail population of 57,537, two deaths, out of a total of 1,986, were attributed to enteric fever in 1871. Of the two, one is apparently returned incorrectly as typhoid, the prisoner's age being entered in the death-roll as 40.

Dr. Cleghorn, of Jounpore, returns the other fatal case. It occurred in a young woman, aged 23. The *post-mortem* appearances in the case were as follows:—"Peyer's patches were all prominent, and the individual glands composing the patch were very distinct. The lowest seven patches were more or less ulcerated, and the ulcers, as a rule, had clear defined edges. The whole mucous membrane of the ileum had a pale wash-leathery appearance. The mucous membrane of the ileo-cœcal valve and the colon and ileum on each side of it was thickened, and had a velvetty appearance. The spleen was normal." Dr. Cleghorn adds:—"The female prisoner had previously suffered from ague and diarrhœa, and was in a low state of health when attacked by the fever."

Statements taken from the Weekly Returns, showing the distribution of Enteric Fever throughout the Cantonments of the Three Presidencies.

BOMBAY AND MADRAS PRESIDENCIES.

Nussecrabad, H. M.'s 1-8th Regiment, Surgeon-Major Auchinlock.

January 6th.—"One man's disease has been changed from ague to enteric fever, as he exhibits undoubted signs of the latter disease."

January 13th.—"One man died during the week from enteric fever (*Æt.* 18; ill 26 days; in second year of Indian service). At the *post-mortem* examination the small intestines were found to be ulcerated in several places. Enlargement of the solitary glands was observed. The large intestine was also found to be inflamed, and it contained a large quantity of dark blood like fluid currant jelly."

September 8th.—"One death occurred during the week. The man came to hospital with ordinary fever, but the type soon changed, and decided symptoms of enteric fever showed themselves. The case was a short one. At the *post-mortem* examination, enlargement of the glands in the small intestines was discovered; some were ulcerated. Had the case been of longer duration, the diseased state of the intestines would have been doubtless more advanced (*Æt.* 21; two years in India; duration of disease 10 days)."

September 15*th*.—"Cases of fever are very frequent, and some of them are more obstinate and difficult of treatment than formerly. Two men died of the enteric or typhoid form of fever during the week. One was ten days under treatment, and exhibited the symptoms of the disease in a very clear manner. There were distinct typhoid deposits in Peyer's patches of the small intestines, and ulcerations in the lower third of the bowel. The mesenteric glands were enlarged (*Æt.* 22; two years in India)."

"The other case was fourteen days in hospital. This case exhibited the usual distinct phenomena of enteric fever also, and the man died somewhat suddenly. The mesenteric glands were found enlarged. In the small intestines, Peyer's patches were thickened, inflamed, and ulcerated. Some of the ulcerations of Peyer's patches had all but perforated the intestines. The solitary glands of the ileum were all enlarged (*Æt.* 22; one year in India)."

"The above are two well marked cases of typhoid fever."

October 6*th*.—One fatal case occurred; it was that of a man who died from enteric fever. He had long been delicate, and had suffered a good deal from ague during the year. He was only twelve days in hospital on this occasion. The usual signs of enteric fever were found: there was ulceration in Peyer's patches, and perforation had occurred in two places, and fæces were found in the cavity of the abdomen (*Æt.* 26; one year in India). Weather much warmer."

October 13*th*.—"Admissions from fever have fallen to a lower figure. One or two cases in hospital threaten to assume the enteric form of fever."

"The causes of this affection must depend upon different conditions than those with which we are accustomed to associate its origin and spread in colder climates. There is nothing in the barracks or privies which can cause it. The weather is very hot and trying."

October 20*th*.—"One man's disease has been changed from ague to enteric fever, as he showed strong signs of the latter disease. The weather has been extremely sultry and trying, and I consider that much of the sickness has been due to this cause."

Neemuch, Detachment 1-8th Regiment, Assistant Surgeon Wace.

April 7*th*.—"The man discharged 'otherwise' is re-admitted under the head of enteric fever. The case is that of a recruit about three months in India. The disease is well marked."

April 14*th*.—"The case of enteric fever is improving slowly."

April 21*st*.—"The case of enteric fever is convalescent."

September 1*st*.—"The case of 'simple continued fever,' discharged otherwise, is re-admitted under the head of 'peritonitis.' The patient is a very weakly lad, who arrived in India only six months ago. He was admitted on the 7th August, suffering from continued fever of the asthenic type. On the 31st ultimo I noticed local peritonitis in the right iliac fossa, which rapidly became general. He now appears to be sinking."

September 8*th*.—"Private J. Standish (*Æt.* 20) died on 2nd instant. The ileum was ulcerated throughout its entire length. A perforating ulcer, about the size of a sixpence, was found about the upper third of the ileum.* The ulcer was partly closed with a slough. Several other ulcers were on the point of perforating. The centre of each contained a yellowish cheesy matter, resembling crude tubercle."

Another case of enteric fever was admitted from this detachment in the week ending 22nd September.† The man recovered and was discharged in the week ending 20th October.

Neemuch, Detachment 1-8th Regiment, Staff Surgeon Parr.

December 8*th*.—"A case of enteric fever, in a young soldier, 20 years of age (ten months in India), proved fatal. Three large perforating ulcers were found in the ileum. The peritoneal coat of the intestine was much inflamed and thickened, and there was general inflammation of the peritoneum."

December 15*th*.—"There has been no fresh case of enteric fever."

Neemuch, 18th Brigade D. Battery R. A., Staff Assistant Surgeon Greene.

August 25*th*.—"The case of ague discharged 'otherwise' was re-admitted as enteric fever.

September 1*st*.—The *post-mortem* examination of the case of enteric fever was made eleven hours after death (*Æt.* 22, second year in India; 15 days ill). Mesenteric glands enlarged, and the blood vessels of the mesentery conspicuously injected. Large intestines apparently healthy, except at the cœcum, where there were two or three spots of ulceration. On opening the small intestines, the jejunum, with the exception of being congested, was found tolerably healthy. The ileum, however, was diseased throughout its entire extent. Large superficial patches of ulceration were visible in its upper half; while the lower half, especially towards its insertion in the cœcum, was studded with smaller and deeper ulcers. There was no perforation discovered, but in several places the coats of the bowel had been eaten entirely away, leaving only the peritoneal covering."

Staff Surgeon Parr.

December 15*th*.—"One case of enteric fever occurred in a young soldier, who was in hospital under treatment for anæmia. He is progressing very favorably."

December 29*th*.—"One case of tonsillitis, discharged 'otherwise,' to be admitted as enteric fever. The case is complicated with pneumonia of the right lung. The man is in a very precarious state."

This man died on 3rd January. "*Post-mortem* examination showed the entire left lung to be in a state of grey hepatisation. No ulceration was found in the bowels, but the small intestine was congested at spots. (An old soldier of twelve years' Indian service, aged 36)."

At the same date on which the autumn cases of enteric fever appeared at Neemuch and Nusseerabad, we find the following case of perforation in the lower third of the ileum, in the return of Her Majesty's 59th Regiment at Mhow:—

Mhow, Her Majesty's 59th Regiment, Surgeon Watts.

August 25*th*.—"The man (*Æt.* 22; second year in India) came to hospital, complaining of cramps in the abdomen. The same evening symptoms of peritonitis became marked, and on the following morning he was in a state of collapse. He died 53 hours after he first came to hospital. A small perforation was discovered in the ileum, about a foot from the cœcum, through which fœcal matter had passed into the peritoneum, with the exception of several small oval depressions, in the centre of one of which the perforation had occurred; the mucous membrane appeared to be perfectly healthy."

September 29*th*.—"The admissions from fever have again been very numerous, and among them is one of enteric fever."

October 6*th*.—"Three cases of enteric fever have been admitted. One case has terminated fatally by ulceration of Peyer's patches and perforation of intestine (*Æt.* 20; ten months in India). In this case there were also some ulcers near the commencement of the colon. The course of the disease was rapid (18 days ill), and death was not preceded by any hæmorrhage from the bowels."

October 13*th*.—"Of the three cases of enteric fever which remained from last week, one has had a fatal termination (*Æt.* 19; one year in India). Extensive thickening and ulceration of Peyer's patches was, as usual, observed, the ulceration being most apparent just above the cœcum. The other cases of enteric fever are progressing favorably."

October 27*th*.—"No fresh cases of enteric fever have occurred. The temperature has fallen considerably."

Ahmedabad, 9th Brigade, F. Battery R. A., Staff Surgeon-Major Duff.

February 3*rd*.—"The man had been several times in hospital within the last four months with fever of a remittent type. The last attack partook much of the typhoid character. *Post-mortem* examination showed the lower part of ileum with the cœcum and colon involved in disease (*Æt.* 20; fifteen months in India)."

---

* There seems to have been general enteritis in this case.

† A case of enteric fever was admitted from the Detachment, H. M.'s 59th Regiment, at Neemuch, in the week ending 29th September. The man recovered.

June 30th—"One severe case of remittent fever proved fatal after the man had been four days in hospital. But on enquiry among his comrades I found that he had been ailing for ten days before, and had entire loss of appetite and occasional diarrhœa. *Post-mortem* examination showed extensive intestinal complications. The lower part of the ileum had its mucous coat highly inflamed in patches, with general thickening. The cæcum presented one mass of disease; the mucous coat being of a dark blue colour and much thickened, with several patches of ulceration. One about the size of a shilling had ulcerated nearly through the intestinal walls. (*Æt.* 30; 22 months in India)."

Kurrachee, Her Majesty's 66th Regiment, Surgeon-Major W. S. Murray.

February 17th.—"One case has been discharged from the head of ague, to be admitted under that of enteric fever, the disease having unmistakeably assumed the characteristics of the latter."

February 24th.—"There has been one death from enteric fever, after an illness of 16 days (*Æt.* 22; ten months in India). The mesenteric glands were found infiltrated and enlarged. About a pint and a half of serum was effused into the peritoneal cavity. The solid viscera of the abdomen were congested, but otherwise healthy. There was increased vascularity of the duodenum and jejunum, and of the upper third of the ileum. The lower two-thirds of the latter were deeply congested and ulcerated, the ulcers increasing in number and size towards the ileo-cæcal valve, which was one mass of ulcers."

March 17th.—"The increase in the admissions from simple continued fever has gone on since last week, and the cases are generally marked by great debility during convalescence. One of the cases under treatment is marked by great severity, the symptoms approaching those of the typhoid variety."

March 24th.—"The case remaining, now entered as enteric, is characterised by a copious eruption of livid petechiæ on the body and limbs. The man is a young soldier, lately arrived from England."

"Another case from the head of simple continued fever has been re-admitted under enteric fever."

April 7th.—"One case appears discharged from the head of simple continued fever, and is re-admitted under enteric fever."

April 14th.—"The two cases of enteric fever are still in a critical condition."

April 21st—"The two cases of enteric fever are doing well."

April 28th.—"The two cases of enteric fever are convalescent."

June 2nd.—"One case appears discharged 'otherwise', namely, from the head of simple continued fever, re-admitted under the head of enteric fever. The case terminated fatally on the tenth day of illness (*Æt.* 20; four months in India). *Post-mortem* appearances in abdomen: solid viscera congested. In small intestines lining membrane of duodenum very vascular; of jejunum natural; of ileum throughout its whole length, presenting ulcers of various sizes and shapes, according, as the agglomerated or solitary glands were affected. In some cases several Peyer's patches, as also solitary glands, were in the incipient state of disease, being much swollen and infiltrated. The ileo-cæcal valve was thickened and ulcerated; there was intense vascularity of the mucous membrane of the cæcum, and a great many deep ulcers affecting the solitary glands. The mesenteric glands were swollen and infiltrated."

July 20th.—"One case has been discharged 'otherwise' from simple continued fever to enteric fever The same patient died on the 27th (*Æt.* 20; five months in India). The duodenum was somewhat congested in several places; the jejunum normal; and the ileum congested in patches throughout, but chiefly near its lower end, where there existed many superficial ulcers of Peyer's glands; cæcum congested, large intestines otherwise normal; mesenteric glands enlarged."

Poona, Her Majesty's 56th Regiment.

January 26th, 1872.—"One case of diarrhœa was changed to enteric fever; the case proved fatal (*Æt.* 24; 22 days ill). The ileum was greatly congested throughout. Numerous ulcers were found, but none penetrating."

Rangoon, Her Majesty's 2-10th Regiment, Surgeon Slaughter.

February 10th.—"One case of enteric fever has been taken into hospital, the patient being a lad who only arrived at this station on the 9th of the month. The disease was in all probability contracted at Arconum, where the draft was encamped. He was taken ill two days before landing in Rangoon, and is now very seriously ill."

The boy died on 11th; (*Æt.* 18; nine months in India).

February 17th.—"Marked characteristics of the disease were found after death. Peyer's patches were excessively enlarged and red. At the lower end of the ileum ulceration had commenced."

A second case was admitted on the week ending 24th February; the man was discharged on 21st April.

April 14th.—"One case has been discharged 'otherwise' from ague, and re-admitted for enteric fever. The man was admitted on the last day of the previous week, and it was not till after he had been under treatment for three days that the real disorder could be diagnosed with certainty. The case is not an unusually severe one."

May 12th.—"The man laboring under enteric fever, who has been ill so long (the case above noted), is now rapidly becoming convalescent." The man was finally discharged in the week ending 16th June.

June 2nd.—"One admission is shown from simple continued fever. The man has been under treatment for two days only, and it is therefore impossible to diagnose with certainty whether this is not really a case of enteric fever, which it closely resembles."

June 16th.—"One officer has been placed on the sick list for enteric fever. The attack promises to be a mild one."

In the week ending 7th July, an obscure case, which proved fatal, is recorded as due to enteric fever. The man was an old soldier, aged 40. "The man was originally admitted under the head of irregular ague. The case throughout was a very obscure one, and death occurred quite suddenly from collapse, consequent on the opening of an ulcer, the size of a shilling, through the intestinal wall."

September 8th.—"One fresh case of enteric fever has been admitted. The two men who were remaining at the beginning of the week have both been ill a very long time, and are now in such an enfeebled condition that it will be necessary to send them away for change."

Port Blair, Andamans, Detachment 2-10th Regiment, Assistant Surgeon Buchanan.

September 15th.—"The case of irregular ague, shown as discharged 'otherwise,' has been re-admitted under the head of enteric fever."

September 22nd.—"The case of enteric fever, shown in last week's return, has exhibited grave symptoms, diarrhœa being one of the most serious and troublesome."

September 29.—"In the case of enteric fever no marked change has taken place."

October 6th and 13th.—"The case of enteric fever is progressing favorably."

October 20th.—"The case of enteric fever, so often mentioned, is now convalescent."

Cannanore, Her Majesty's 89th Regiment, Surgeon Sparrow.

*January 6th.**—"One case of fever has been discharged 'otherwise,' the disease having been returned as enteric fever, the symptoms being conclusive. The cases of fever generally are not doing well. There is a tendency in all to assume a low typhoid type. The attacks are exclusively confined to the young soldiers."

January 13th.—"Five cases of simple continued fever have been admitted; one appears to be assuming the typhoid type. The debility in some cases is extreme."

January 20th.—"Fever continues to be the prevailing disease. Most of the patients are slowly progressing towards recovery, but others continue very weak. In one case, although two months in hospital, the delirium still continues at times. Fifty-three cases have now been under treatment; and, with one single exception, these all occurred in young soldiers. Quinine and other specifics in fever have been useless. The disease appears to run a certain course unchecked by any remedy. The sudden change to a warm climate appears to have been the exciting cause."

---

* Two months after arrival in India.

January 27th.—"The diseases of five men have been changed from simple continued fever to enteric fever. All of these men are in a very low state. There are not many cases of fever under treatment, but the majority have the tendency to turn into a typhoid state. These cases are now isolated in tents, the hospital is being whitewashed, and all evacuations are disinfected. The two fatal cases resulted from enteric fever. In the one there was perforation of the ileum, and in the other the gut was covered with ulcers, and much thinned (1, *Æt.* 20; 12 days ill; 2, *Æt.* 24; 21 days ill)."

February 3rd.—"One man's disease has been changed from febricula to enteric fever. He is in a very critical condition, pneumonia having set in. Two fresh cases of enteric fever have been admitted; as yet there are no unfavorable symptoms."

February 10th.—"The case of enteric fever complicated with pneumonia is progressing favorably."

April 7th.—"One case of enteric fever has been admitted. The symptoms at present are very unfavorable, owing to cerebral implication."

April 14th.—"The case of enteric fever proved fatal during the week (*Æt.* 22; 8 days ill). *Post-mortem* appearances consisted of enlarged spleen and liver, congestion of abdominal viscera, ulceration of the lower part of ileum, congestion of membranes of brain, and effusion into ventricles."

May 5th.—"Another case of enteric fever has been admitted. The usual head symptoms are present."

May 12th and 19th.—"The case of enteric fever is progressing favorably."

Between May and December there is the record of one case only of typhoid, and that a doubtful case. In the week ending 21st July we find this remark:—"The case remaining under the head of simple continued fever has marked typhoid symptoms, although the characteristic eruption is not observed." And again in the week following—"The characteristic eruption of typhoid fever is still absent. The case is not doing well. The patient is much exhausted and delirious." Up to 11th August the report is still that the patient is very low, and it is noticed only on 1st September that the patient has greatly improved during the week.

In the week ending 8th December typhoid re-appears, along with an exacerbation of acute dysentery.

December 8th.—"Ten cases of dysentery were admitted during the week. The days are intensely hot, with cold land winds at night.* One case of enteric fever is under treatment. At present the symptoms are not very urgent. He was admitted on 28th ultimo under the head of simple continued fever."

December 15th.—"The case of enteric fever is doing well."

December 29th.—"The case of enteric fever is convalescent. One case of simple continued fever, admitted this week, is assuming a typhoid character."

December 31st.—"One man's disease has been changed from simple continued fever to enteric fever, the latter disease being well marked and of a very severe type."

January 5th, 1872.—"The case of enteric fever continues in a very dangerous state."

January 12th.—"One man's disease was changed during the week from simple continued fever to enteric fever. The symptoms are well marked and severe. The other case remaining is progressing favorably; the delirium is abating, and the strength is maintained."

These cases were finally discharged, the one on 8th March, and the other on 12th April.

Bangalore, 16th Lancers, Surgeon Innes.

May 25th.—"One case of enteric fever was admitted during the week." The case was discharged in week ending 23rd June.

1-21st Regiment, Surgeon Longhead.

July 14th.—"Two cases of enteric fever proved fatal during the week. *Post-mortem* appearances—Case 1 (*Æt.* 20; 29 days ill):—Liver enlarged, spleen much enlarged, small intestines ulcerated. Case 2 (*Æt.* 22; 29 days ill):—Mesenteric glands enlarged and indurated, circular gouged-out ulcers found in ileum and cœcum, and ulceration round the ileo-cœcal valve."

December 15th.—"A case of enteric fever came under observation."

December 29th.—"The two cases of enteric fever mentioned in last week's report are progressing favorably."

Bellary, 3-60th Regiment, Surgeon Young.

October 20th.—"A case of continued fever, admitted the previous week, was discharged otherwise and re-admitted under the head of enteric fever. The disease was rapid in its course and proved fatal after 11 days' treatment (*Æt.* 21; first year of Indian service). The autopsy showed the mesenteric glands greatly enlarged, Peyer's patches and the solitary glands extensively involved, most of them being in a state of infraction and protruding into the intestine. There was a considerable amount of inflammation around the glands. There are no insanitary conditions in the neighbourhood of the barrack which this man occupied to account for the origin of the attack."

Secunderabad, 2-24th Regiment, Surgeon Cullen

On 6th January, a man (*Æt.* 20), of the C Battery, D Brigade, Royal Horse Artillery, died from typhoid fever at Secunderabad. The details of the case are not supplied.

May 19th.—"One case changed during the week from simple continued fever to enteric fever. The man is progressing favorably."

May 26th.—"The case of enteric fever is doing well."

June 9th.—"The case of enteric fever continues to improve." The man was discharged on the week ending 7th July.

August 11th.—"One death occurred during the week from enteric fever (*Æt.* 20; 2 years' service, probably first year in India). The patient was admitted on 8th instant. He stated that for two days previously he had suffered from loss of appetite, slight looseness of bowels, and general malaise. From his appearance on admission he must have been ailing for a longer time than he stated. His pulse and temperature were high. There was tenderness on pressure on the right iliac region, slight gurgling and tendency to meteorism. These symptoms were more marked on the 9th. A few rose-coloured spots were visible, and there was some subsultus. The pulse, however, continued of good volume. On the morning of the 10th he appeared in the same condition as on previous day, with the exception of slight sordes on the teeth. On the afternoon the pulse became very weak, and there was delirium. On the morning of the 11th he was evidently sinking. He died at 11 A. M. On *post-mortem* examination some recent adhesions were found at the base of the right lung, which was very dark and congested. Left lung dark and slightly congested. Heart, liver, spleen, and kidneys healthy. Large intestines healthy. The lower two feet of the ileum was congested externally, and on opening the bowel several solitary glands were found prominent and congested; three were ulcerated. One aggregate gland was ulcerated. There was also a large ulcerated patch in cæcum. The solitary glands were prominent and congested."

September 8th.—"The case of enteric fever, admitted this week up to the present, is going on favorably."

September 15th.—"Two cases were re-admitted during the week, one from remittent fever to enteric fever, and the other from simple continued fever to enteric fever, making three admissions from enteric fever during the week. The patient who died had just concluded his sixth day in hospital on the morning of his death (*Æt.* 26). He was delirious on the second day after admission, and from the fourth day he was gradually sinking, having fallen into a semi-unconscious state, associated with nervousness and prostration. The bowels were constipated as a rule, and during the last day or two his abdomen became tympanitic. No rose-coloured spots were observed, as they rarely appear before the seventh or eighth day. As the patient was in tolerably good health at the time of the febrile accession, the rapidly fatal course the disease ran cannot be ascribed to constitutional depression or lowered vitality, but rather to the fact that he was subjected to the influence of a powerful dose of the fever poison. The occurrence of enteric fever may, I think, in a great measure be attributed to the undrained condition of the barracks. *Post-mortem* appearances :—Abdomen : Peritoneum considerably inflated with extremely fœtid gas. Colon healthy. Ileum : Lower third very much congested and denuded of epithelium in several places. Peyer's patches ulcerated in the last two feet of the intestine. Several ulcerations involved the entire thickness of the intestine, which would have been perforated had he lived a few days longer. Just before the ileum joins the caput cæcum, several large thickened ulcers were observed."

---

* It was at the same season in 1871 that enteric fever appeared in the regiment, very soon after landing from England. Undue importance has been attached to the fact that this fever occurred during the 'cold season;' and the erroneous deduction has been made that climatic influences could not in this case have predisposed the young men to the outbreak.

September 22nd.—" The two cases of enteric fever admitted, as also the others, are going on favorably."

October 6th.—" The cases of enteric fever are progressing favorably."

October 13th.—" One of the patients with enteric fever has had a relapse, and is in a critical state."

October 20th.—" One death occurred from enteric fever (*Æt.* 20 ; two years' service, probably first year in India 16 days ill). *Post-mortem* appearances :—Intestines : Viewed *in situ*, the large were in appearance quite healthy. Several large circular patches were seen on the ileum, the coats at these points being almost obliterated. On opening the intestines, the large contained some dark fluid blood, and was a good deal congested, more particularly the descending colon. The cæcum was a mass of ulceration, of a dark claret colour. The ileum throughout its whole length was studded with ulcers in different stages, and some had almost penetrated through the coats ; others were commencing to break down. Jejunum and duodenum healthy."

A case of enteric fever, admitted in the week ending 8th December, was remaining in hospital at the close of the year.

Kamptee, 20th Brigade, D Battery, Royal Artillery, Assistant Surgeon Jones.

September 22nd.—" One case changed from febricula to typhoid fever. The patient is now doing well." The patient was discharged in the week ending 1st December.

Wellington Sanitarium, Surgeon Carter.

January 20th.—" One case of fever has assumed a very low form for the last few days, attended with great prostration."

January 27th.—" The case of fever alluded to last week is doing well, although the man is very weak."

February 3rd.—" The case of fever previously alluded to has had a slight relapse, but the more severe symptoms of his illness have not returned."

February 10th.— " I have no hopes of recovery in case of continued fever. At the time of writing he is in a state of collapse."

February 17th.—" The case alluded to in last report died on the 11th. There was an absence of the prominent features of typhoid fever during his life time, but the *post-mortem* examination revealed congestion of the lungs and extensive ulceration of the ileum (*Æt.* 20 ; two years' service, probably first season in India 36 days ill)."

BENGAL PRESIDENCY.*

Fort William, H. M.'s 2-19th Regiment, Surgeon Hoffernan.

January 27th.—" One case appears discharged 'otherwise,' that of a man changed from simple to enteric fever."

February 17th.—" One case has been changed from simple to enteric fever, and appears in the column 'discharged otherwise' "

22nd Brigade, 3 Battery, Royal Artillery.

February 3rd.—" One case of enteric fever is under treatment, and at present doing well."

February 17th.—One case has been discharged 'otherwise,' that of a man from simple continued fever to enteric fever." These two cases were discharged in the week ending 10th March.

Dum-Dum, H. M.'s 107th Regiment, Surgeon Corbett.

March 10th.—" One man died on the night of the 10th from perforation of the ileum, as ascertained on *post-mortem* examination. He had been admitted for ague on 16th February, and the disease assuming a remittent type was changed on 4th March. The fever had assumed a typhoid character, with hæmorrhage from the bowels, for several days before death. The ileum and cæcum were filled with ulcers, and the large bowel contained blood."

Barrackpore, Detachment 107th Regiment.

July 28th.—" One man died (*Æt.* 26) from a low form of continued fever, as nearly as possible resembling typhoid ; but the rose spots on the abdomen and meteorism were absent."

Hazareebaugh, H. M.'s 63rd Regiment.

Her Majesty's 63rd Regiment, in its first year of service, suffered heavily from typhoid. A large number of cases, with full clinical details, having been published by Assistant Surgeons Hannah and O'Farrell, it is unnecessary to enter the observations noted in the weekly returns.

Dinapore, H. M.'s 96th Regiment, Surgeon Mitchell.

February 17th.—" A young lad (*Æt.* 18) recruit, recently joined, was admitted on the 10th with ardent continued fever, which in course of treatment became complicated with alarming head symptoms. On awaking from a tolerably long and quiet slumber on the 15th, he was seized with violent convulsions, and died two hours after. Extensive patches of ulceration were found on the lower part of the ileum. The cæcum was also ulcerated."

Fyzabad, H. M.'s 20th Regiment, Surgeon Skues.

May 12th.—" Two cases of ague have been discharged otherwise and re-admitted as enteric fever, typhoid symptoms having supervened." One case was discharged on the week ending 7th July, and the other died, after 61 days' illness, on 12th July.

Lucknow, F Brigade, C Battery, Royal Horse Artillery.

June 23rd.— " The case of enteric fever was, by a clerical error, shown as typhus fever in the return of last week." The man was discharged in the week ending 11th August.

24th Brigade, 3rd Battery, Royal Artillery, Muchee Bhawun, Lucknow, Assistant Fort Surgeon Wallace.

February 3rd.—" The case discharged otherwise was changed to typhoid fever. The *post-mortem* examination (*Æt.* 20 ; 15 days ill) showed the abdomen very much swollen, the stomach and intestines being inflated with gas. The mucous membrane was found congested throughout ; the mesenteric and Peyer's glands were very much enlarged, with dark purplish spots scattered here and there, and patches of ulceration."

H. M.'s 62nd Regiment, Surgeon Hollingsworth.

March 3rd.—" One case of simple continued fever was changed to enteric fever."

March 10th and 17th.—" The case of enteric fever is progressing favorably." He was discharged in the week ending 24th March.

H. M.'s 1-17th Regiment, Surgeon Ingham.

January 13th.—" One case has been discharged 'otherwise' and entered as enteric fever. The case proved fatal (*Æt.* 19 ; one year of service ; 29 days ill). *Post-mortem* appearance :—Effusion of serum into abdomen and of lymph, causing matting together of intestines from ulceration and perforation of ileum."

January 27th.—" One entry has been changed from simple continued fever to enteric fever."

February 3rd.—" One case has been changed from simple continued fever to enteric fever."

---

* A new Death Return, a local form, having been introduced from January 1871, it was intimated to medical officers that remarks on *post-mortem* appearances would no longer be required to be appended to the Weekly Return. The British Medical Department has since cancelled this circular, and the observations are detailed as usual. This explains why in many of the earlier notices of 1871 no notice is made of the appearances after death in fatal cases.

February 24th.—"One death is recorded from enteric fever (*Æt.* 21). The disease lasted 32 days."

March 17th.—"One affection has been changed from simple continued fever to enteric fever."

February 24th.—"One death occurred, that of a man admitted under the head of simple continued fever, whose disease was changed to enteric fever (*Æt.* 22; one year of total service)."

April 21st.—"Two cases were changed from simple continued fever to enteric."

April 28th.—"One case of simple continued fever was discharged, and re-admitted for enteric fever."

May 12th.—"One case has been changed from simple continued fever to enteric fever."

July 1st.—"A case admitted under the head of simple continued fever, in the course of the disease assumed the enteric form, and was changed to enteric fever."

Assistant Surgeon Allan.

July 7th.—"One death from enteric fever (*Æt.* 19; one year of total service; 22 days ill)."

August 18th.—"The fatal case is one which was changed during the week from simple continued fever to enteric fever (*Æt.* 19; one year of total service; 18 days ill)."

November 10th.—"One case of simple continued fever has been changed to enteric."

November 17th.—"There was one fatal case of enteric fever (*Æt.* 22). The mucous membrane of the small intestine was found congested, but not ulcerated except near the ileo-cœcal valve."

Surgeon Ingham.

In his sanitary report for the year, the Surgeon of Her Majesty's 1-17th Regiment makes the following general statement:—

"There were not very many cases of fever during the past year; most of the serious cases assumed an enteric type, and were attributable to climate."

September 1st.—"In the case discharged 'otherwise,' the type of fever having become typhoid, the disease was changed to enteric fever (*Æt.* 29). It was only on the day previous to death that marked abdominal symptoms of the disease could be detected."

Seetapore, 1-3rd Regt., Surgeon O'Brien.

April 7th.—"One case of simple continued fever of a low type was admitted."

Cawnpore, 1-14th Regiment, Assistant Surgeon Randall.

April 21st.—"The boy who died from enteric fever was semi-comatose for several days. It was a very bad case from the commencement (*Æt.* 11 years)."

August 25th.—"An Army School-master attached to the Regiment has been admitted with well marked enteric fever, the source of which cannot be explained."

Surgeon Major Moffat.

September 1st.—"The fatal case of enteric fever was that of an army school-master attached to the 1-14th Regiment. He was ill for two or three days before admission, and it was evident from the commencement that he had imbibed a large dose of the poison, and he had little stamina to sustain him through such an illness. There was much congestion of the lower part of the ileum, with ulceration in and around Peyer's patches, especially in the neighbourhood of the ileo-cœcal valve."

September 8th.—"One man's disease has been changed from remittent fever to enteric fever." He was discharged in the week ending 3rd October.

Allahabad, 104th Regiment, Surgeon Henry.

December 9th.—"One case changed from remittent to enteric fever, and another from simple continued fever to enteric fever."

H. M.'s 2-19th Regt., Surgeon Heffernan.

December 22nd.—"One case appears in the column 'discharged otherwise.' It was a case changed from simple continued fever to enteric fever. The man died (*Æt.* 28). The stomach was found in a state of sub-acute inflammation; the large intestines normal; and the small intestines much inflamed from the ileo-cœcal valve upwards for about 5 feet. Both Peyer's patches and the solitary glands were much thickened and inflamed, and ulcerated to an enormous extent."

January 27th.—"A draft from England of 153 men arrived on 22nd instant. The men are mostly very young and not fully developed, and although apparently in fair health at present, are much too young for service in the plains. A draft for Her Majesty's 25th Regiment at Bareilly left two men and one female patient, who were transferred to this hospital.*

Shahjehanpore, 2-1st Regiment, Surgeon Kelsall.

February 3rd.—"One case under tonsillitis, and two under diarrhœa, were changed to enteric fever. On the diagnosis being established, a report of the circumstance was made to the principal medical officer at Lucknow. In one of the latter cases the fever was asthenic from the beginning with symptoms resembling acute dysentery. But in each case the eruption of scattered rose-coloured spots, chiefly on the abdomen, with a dry glazed fissured tongue, removed any doubts as to the diagnosis. Only a partial and hurried inspection of the body of the woman was made; but the specific bowel lesion was well marked, namely, ulceration and thickening of Peyer's patches. The part examined was from the neighbourhood of the ileo-cœcal valve. The cases have been isolated in tents, and every precaution taken against the spread of the disease."

February 24th.—"The case of enteric fever which proved fatal on 20th instant (*Æt.* 20; six months' total service; 15 days ill) was changed from remittent fever on 18th, the coincidence of the eruption of rose-coloured spots and hæmorrhage from the bowel causing the diagnosis to be amended. On the next day, the symptoms of peritonitis declared themselves. A case of diarrhœa in another young lad, recently arrived with the draft, has been changed to enteric fever."

October 6th.—"The case of ague changed to enteric fever is progressing very favorably. This is now the 16th day.

October 13th.—"The case of enteric fever is doing very well."

May 12th.—"One disease was changed during the week to typhoid fever. The symptoms of the disease are well marked. The case so far progresses favorably. The patient has been isolated, and all the usual means taken to prevent the spread of the disease." He was finally discharged on the week ending 23rd June.

Bareilly, H. M.'s 2-25th Regiment, Assistant Surgeon Markey.

A case of enteric fever admitted in week ending 21st April, was discharged on the week ending 26th May.

Nynee Tal Depôt, Assistant Surgeon Tanner.

September 15th.—"The case changed to enteric fever is one in which marked head symptoms set in suddenly a day or two after the accession of the fever."

September 22nd.—"The case of enteric fever noticed last week is doing very well."

September 29th.—"The case of enteric fever is in a fair way to recovery."

May 19th.—"One fatal case of remittent fever, the case marked 'otherwise.' The man was admitted with simple continued fever, but the remittent character of the fever was developed the following day. The principal *post-mortem* appearances were ulceration of the glands about the iliac portion of the intestines." The patient was a boy of 21, three months in India.

Roorkee, H. M.'s 109th Regiment, Surgeon Major Thornton.

July 14th.—"In one case the disease has been changed from simple continued to enteric fever." The man was discharged in the week ending 18th August.

Meerut, 16th Brigade, F Battery Royal Artillery, Assistant Surgeon Taylor.

October 13th.—"One case of enteric fever was admitted during the week."

October 20th.—"One case of enteric fever died during the week (*Æt.* 20). The *post-mortem* examination showed extensive ulceration of the glands of lower portion of small intestine."

---

* Two of these, a man and the woman, turned out to be cases of enteric fever. The woman died on 3rd February, and the man was discharged on 27th February.

10th Brigade, D Battery, Royal Artillery, Assistant Surgeon Crane.

July 21*st.*—"The disease of a patient, who had been admitted with diarrhœa, was changed to remittent fever."

July 28*th.*—"The patient whose disease was changed last week to remittent fever died on 22nd (*æt.* 20; first year in India; 18 days ill)."

H. M.'s 4th Hussars, Surgeon Jessop.

May 5*th.*—"The case discharged 'otherwise' was from bronchitis to enteric fever. The spots appeared three days after admission." The man was discharged on the week ending 9th June.

H. M.'s 105th Regiment, Surgeon Haward.

May 5*th.*—"Among the cases admitted this week were two very severe cases of remittent fever, one of which proved fatal after five days' duration. The second was admitted two days since, having distinctly marked ague. This morning he has sordes on the teeth and lips, low muttering delirium, pupil dilated, and great heat of skin; pulse 96. In neither case was there any sign of eruption or spots.* In the last case there is at present neither diarrhœa nor tympanites. Both of these were strongly marked in the first case; so much so that there was considerable doubt as to whether it should not be returned as enteric fever. In both cases the remission was very distinct. In the latter so much is this feature present, that it is difficult to say when the fever ceased to be 'intermittent.' Two days ago he had that disease, with every stage distinct. Both are recruits recently arrived in the country, and under 19 years of age."

May 12*th.*—"The case remaining, and remarked on last week, still lingers, but with all the symptoms aggravated. During the week he has had almost continuous delirium. Unlike every other case that has occurred in the regiment, he has no inflammation or ulceration in the intestinal canal, and from this great hopes were at first entertained of his recovery. During the last 24 hours, however, the congestion of brain has much increased. He has a distinct remission about day-break every day; he comes partially sensible, that is, he can be roused to answer question."

May 19*th.*—"In the case of remittent fever there is now no fever or delirium, but complete prostration. The skin has assumed its natural temperature, and the pulse its normal number."

June 2*nd.*—"One severe case of enteric fever has been admitted, produced by exposure to the sun. The man was absent from barracks, and spent the whole day in the bazaar." The man died after four days' illness. There are no remarks on this case.

June 30*th.*—"One fatal case occurred from remittent fever (*Æt.* 19). Two other cases of the same disease remain, in both of which the symptoms indicate the disease to be in its worst form. In each case the subject is a recruit under one year's service.

July 7*th.*—"Of the two cases remarked on last week, one is convalescent, and the other is to-day a little better, but still in a precarious state."

July 14*th.*—"The case reported on last week is still in a precarious state, but as there is no symptom of enteric lesion, there is a chance of recovery."

October 6*th.*—"One case of ague is discharged, and entered as remittent fever. The symptoms in this case are very urgent, and resemble in many ways those of typhoid fever.

October 13*th.*—"Three very bad cases of enteric fever are under treatment. One of them, the worst, was admitted under the head of remittent fever, and the others under the head of ague. In none of them were the symptoms at first distinct enough to decide what the exact type of the fever would be. But since admission the characteristics of the disease have become apparent, especially the diarrhœa and the rose-coloured spots. The first-mentioned case has, for the last week, been in a semicomatose state by day, with raving delirium at night."

July 20*th.*—"The case of enteric fever remarked on last week, in which the rose-coloured spots were so distinctly marked, proved fatal. Death was caused by pneumonia. Congestions were found throughout the small intestine."

Muttra, H. M.'s 11th Hussars, Asst. Surgeon Smith.

June 2*nd.*—"The case of continued fever remaining last week, has been changed to typhoid fever; purging of ochreous-looking stools, gurgling of the right iliac fossa on pressure, heat of stomach, with red-edged red-tipped tongue, are the chief symptoms."

June 9*th.*—"One case under the head of continued fever has been changed to enteric. The case is doing well up to the present date. The other case of enteric fever remaining is doing well."

June 23*rd.*—"The two cases of enteric fever are convalescing."

August 11*th.*—"A case of remittent fever has been retrogressing during this week, and very considerable purging has taken place."

August 18*th.*—"Two cases under the head of intermittent and remittent fever have been changed to enteric fever. One of them is of a serious nature, the patient requiring stimulants at regular intervals."

August 25*th.*—"The cases of enteric fever mentioned in last report have been progressing favorably."

Agra, 22nd Brigade, 7 Battery, Royal Artillery, Assistant Surgeon Godwin.

February 3*rd.*—"The case 'not yet diagnosed' is, I think, a suspicious case of continued fever. The patient is a young lad."

February 10*th.*—"The case not diagnosed in last return has become one of enteric fever. The patient is still seriously ill."

February 17*th.*—"The case of enteric fever is in a fair way of recovery." He was discharged in the week ending 31st March.

H. M.'s 65th Regiment, Surgeon Sherlock (reached Agra from England on 17th Feb.)

March 17*th.*—"A case of rheumatism was discharged, and re-admitted under the head of typhoid fever. The case has since died (*Æt.* 25; 22 days ill)."

July 21*st.*—"A boy, 19 years of age, died from fever during the week. He was taken suddenly ill with hæmorrhage from the intestines on the evening of the 19th, and died next day."

August 11*th.*—"No deaths have occurred, but three men are very low with fever. One has passed a large quantity of blood *per anum.*"

August 25*th.*—"One man suffering from simple continued fever was discharged 'otherwise,' and re-admitted under the head enteric fever. He died on the 19th."

September 8*th.*—"One man died of fever during the week. Ulceration of a peculiar barnacle like appearance, and very foul-looking, was found in the vicinity of the ileocæcal valve, extending into cæcum. None higher up than the valve."

September 15*th.*—"One man died during the week from remittent fever. A good deal of congestion was found throughout the whole intestinal tract; Peyer's patches were congested and increased in size; and the solitary glands were similarly affected."

September 22*nd.*—"Two men died of continued fever during the week. In one case (*Æt.* 24), foul and ragged ulcerations in cæcum and smaller ulcerations extending into the colon were found. The ileocæcal valve was implicated in the lesion."

October 6*th.*—"One man died from continued fever (*Æt.* 20). The cæcum was found ulcerated, and the colon congested, but not ulcerated"

November 17*th.*—"One private died during the week from continued fever. The intestines were healthy with the exception of about three feet of the lower portion of the ileum which was ulcerated in several places."

December 15*th.*—"The case discharged 'otherwise' was re-admitted under the head of enteric fever, and is getting on well."

---

* The boy who died, died on the fifth day of the fever.

65th, Agra, week ending 12th January 1872, Assistant Surgeon Cuthbertson.

"The case marked 'discharged otherwise' has been a long time in hospital. I had a suspicion at an early date that typhoid fever was present, but I preferred waiting in order to be sure. The stigmata have now appeared, and with the other signs, I am not slow in calling the disease 'enteric fever.'"

It is right to state that, notwithstanding the characteristics indicated, in two cases only were the fever deaths of this regiment returned as enteric. In all, 17 men died from fever; and of the 15 deaths returned as due to the remittent and continued forms, two only occurred in men over 25 years of age.

Fortress Gwalior, 24th Brigade, 2 Battery, Royal Artillery, Assistant Surgeon Kearney.

June 16th.—"One man was admitted this week with a very low form of continued fever, accompanied with diarrhœa."

June 23rd.—"The case of fever, changed on the 21st to enteric fever, was improving and going on well until the 21st, the thirteenth day of the disease, when he had a very severe relapse, with low delirium. About the middle of the night a favorable crisis set in, and he is now going on well"

June 30th.—"The case of enteric fever has now passed the twenty-first day of the disease, and is going on favorably."

He was discharged in the week ending 1'th August.

August 25th.—"One case of enteric fever has been admitted. The woman attributes the attack to a severe wetting which she received."

September 1st.—"The case of enteric fever, mentioned as occurring in a woman last week, proved fatal."

September 29th.—"One case discharged 'otherwise' was changed to enteric fever." He was discharged in the week ending 3rd November.

Detachment 106th Regiment, Assistant Surgeon Martin.

December 1st.—"A case discharged 'otherwise' was re-admitted with peritonitis, and died the same day. The *post-mortem* examination revealed intense inflammation of the peritoneum, and ulceration of the mucous membrane of the ileum, and beginning of the colon."

Nowgong, Bundelcund, 23rd Brigade, F Battery, Royal Artillery, Assistant Surgeon White.

September 22nd.—"One man, noted as discharged 'otherwise,' whose disease has been changed, was admitted with ague. This has been followed by continued fever, for which he has been re-admitted."

September 29th.—"One fatal case occurred, of enteric fever (*Æt.* 19). The case was entered as continued fever, but enteric fever was substituted after the *post-mortem* examination. The only *post-mortem* appearance of any note was the distinctive ulceration of the glands in the lower portion of the small intestine."

Subathoo, H. M.'s 2-12th Regt., Asst., Surgeon Reid.

June 30th.—"In the case of ague discharged 'otherwise,' the disease was changed to enteric fever."

July 7th.—"One death occurred from enteric fever (*Æt.* 21; 24 days ill)."

Umballa, F Brigade, E. Battery, Royal Artillery. Asst. Surgeon Berkeley.

August 18th. "One man's disease has been changed from ague. On the second day after admission, symptoms of enteric fever were noticed, but the nature of the disease was not clearly manifest until a few hours before death. The case terminated fatally at a very early stage (thirteenth day), from cerebral effusion (*Æt.* 24)."

H. M.'s 72nd Highlanders, Surgeon Meane.

May 12th.—"A few cases of ephemeral fever occurred among the young soldiers, and are still occurring. One case discharged 'otherwise' appears in the return. It is that of a man admitted with simple continued fever discharged and re-admitted with enteric fever."

May 19th.—"The case of enteric fever alluded to in last week's return is improving." The man was discharged in the week ending 7th July.

Another case of enteric fever, admitted on 24th August, after running a long course was changed on 7th December to "general debility."

September 22nd.—"The case discharged 'otherwise' has been re-admitted, enteric fever having supervened on simple continued fever. The patient died on 21st September (*Æt.* 21). In the ileum and just above the cœcum, and for some considerable distance upwards, various patches were found to be intensely congested. Peyer's patches, and some of the solitary glands especially, were more or less affected with typhoid deposit. These appearances were most marked the nearer to the ileocœcal valve."

October 20th.—"One death occurred from enteric fever (*Æt.* 26; 29 days ill). *Post-mortem* appearances:—Commencing peritonitis. Streaks of pus about the peritoneum and intestines, which were inflamed throughout their entire course. There were two small ulcers and one larger one, which had perforated the intestines."

Jullundur, H. M.'s 54th Regt., Surgeon Thompson.

From the weekly returns of 1872, up to 30th August, I take the cases which follow. Her Majesty's 54th Regiment arrived from England at the end of 1871.

May 10th.- A man's case was changed from diarrhœa to enteric fever. "The duodenum and jejunum were healthy. The ileum was deeply congested externally. Several of Peyer's patches near the lower end were superficially ulcerated, the patches being slightly thickened. The mesenteric glands in the neighbourhood were enlarged. The cœcum contained several small excavated ulcers."

August 30th.—"A case of enteric fever proved fatal during the week (*Æt.* 25; 20 days ill; one year of service). Peyer's patches at the lower end of the ileum were found ulcerated, and also the solitary glands in the ileum. In the cœcum and ascending colon the solitary glands were ulcerated, some semi-gangrenous."

Ferozepore, 22nd Brigade, 5th Battery, Assistant Surgeon Devlin.

February 10th.- "A young recruit of 19 years, who arrived from home about a month since, was admitted on 27th January on account of ague. The disease in the course of the week merged into enteric fever. He has been discharged 'otherwise,' and re-admitted for the new disease." He was discharged on the week ending 7th April.

H. M.'s 39th Regiment, Surgeon Ross.

January 27th.—"A recruit of the draft, who took ill on the march from Meean Meer, has symptoms of typhoid fever."

February 17th.—"A recruit, who came in the draft which joined from England on the 24th ultimo, died of enteric fever on the 13th instant. On admission he was suffering from diarrhœa. His tongue was dry and brownish, but he had none of the characteristic spots. He progressed favorably, taking large quantities of fluid nourishment, until the day before his death, when he got restless and complained of pain. Perforation of the bowel was diagnosed. Extensive peritonitis was found, with about a pint of sero-purulent fluid in the abdomen. The solitary glands of the lower ileum and large intestine were ulcerated, and most of them had a whitish disorganised core in the middle of the ulcer. The point of perforation was not discovered."

Sealkote, A Brigade, E Battery Royal Horse Artillery, Assistant Surgeon Preston

April 7th—A death from typhoid fever, in a boy of 20, appears in the return of this week. No remarks are appended.

April 28th.—"One man's disease was changed during the week from continued fever to enteric fever, the origin of which is obscure."

May 5th.—"One man died during the week from enteric fever (*Æt.* 20; 18 days ill)." No remarks appended.

5th Lancers, Surgeon Andrews.

January 27th.—"One patient's disease has been changed during the past week from simple continued fever to enteric fever. He is seriously ill, and has been under treatment in hospital since the 10th December last."

February 10th.—"The patient suffering from enteric fever, although seriously ill, is progressing favorably." He was discharged on the week ending 31st March.

In Her Majesty's 58th Regiment, at Sealkote, a case of enteric fever was admitted in the week ending 8th September, and discharged in the week ending 6th October. It is not remarked on in any return.

Meean Meer, 22nd Brigade, 4th Battery, Royal Artillery, Assistant Surgeon Smith.

February 17th.—"One case of simple continued fever was changed, on 11th, to enteric fever." The boy (*Æt.* 18) died on the 15th.

Umritsur, Detachment 92nd Regiment, Assistant Surgeon Smith.

August 25th.—"One case of remittent fever was changed to enteric fever." No remarks. The man was discharged in the week ending 13th October.

H. M.'s 37th Regiment, Surgeon Ekin.

October 27th.—"There was one disease changed from ague to enteric fever. It is not a well-marked case of the latter disease, and it is complicated with pneumonia of left lung."

November 3rd.—"The case of enteric fever is progressing slowly but favorably."

November 10th.—"The case of enteric fever is doing well."

November 17th.—"Another case was changed from palpitation to enteric fever, the symptoms resembling those met with in that disease."

Both cases were remaining at the close of the year.

Rawulpindee, A Brigade, A Battery, Royal Horse Artillery, Assistant Surgeon Thomson.

August 4th.—"Within the last two days, a case of continued fever has presented typhoid symptoms, and is in rather a critical state."

August 11th.—"The case noticed in last week's return as presenting typhoid symptoms, had his disease changed to enteric fever. The case proved fatal last night (*Æt.* 21; 13 days ill). Pneumonia of both lungs, in the second stage, was found; also ulceration of Peyer's patches in the lower part of ileum, and congestion of the mucous membrane of the upper part of the small intestine."

H. M.'s 36th Regiment, Surgeon Knipe.

March 31st.—"One case of enteric fever was admitted from among men of the draft from England, the same whose disease has been changed from simple continued fever, and has proved fatal. Some enteric symptoms appeared before his death, but they were not well-marked." No observations on *post-mortem* appearances.

H. M.'s 70th Regiment, Surgeon Fuller.

Her Majesty's 70th Regiment, which came to India in the end of 1871, contributes the following cases during the current year:—

January 19th.—In this week three young officers of this regiment were suffering from enteric fever.

"One man's disease has been changed from hepatitis to enteric fever."

"Another man (*Æt.* 20; 1 year of service) died on 13th, under the head of simple continued fever. The *post-mortem* examination showed the disease to be enteric fever, there being the characteristic changes in Peyer's patches, the solitary glands, and adjacent mesenteric glands."

January 26th.—"Cases of enteric fever still occur. There does not appear to be any particular local cause to account for it. The sanitary conditions of barracks and latrines are satisfactory."

March 1st.—"A man's disease has been changed from simple continued fever to enteric fever."

"The three sick officers are still in a very prostrated condition. One only shows any sign of improvement."

May 31st.—"Fevers of a low continued type continue to be the prevailing diseases. Undoubtedly, some cases are typhoid; but during life the symptoms are so masked and modified that it is not considered advisable to return them as such. One man's disease has been changed to enteric fever. *Post-mortem* examination showed the characteristic ulceration of Peyer's patches, and enlargement of the mesenteric glands (*Æt.* 20)."

June 7th.—"Some of the cases of continued fever are trivial, but others are more serious, and are accompanied by diarrhœa. The case of enteric fever admitted during the week terminated fatally about the thirteenth day of the fever. *Post-mortem* examination showed the characteristic ulceration of Peyer's patches, and enlargement of the mesenteric and solitary glands (*Æt.* 21)."

June 21st. "One man's disease was changed after death from diarrhœa to enteric fever. *Post-mortem* examination showed the characteristic ulceration of Peyer's patches, and enlargement of the solitary and mesenteric glands (*Æt.* 24)."

July 19th.—"A man's disease has been changed from simple continued fever to enteric fever."

Cherat, Detachment 2-60th Regiment, Surgeon Woodward.

July 21st.—"One man's disease was changed during the week from simple continued fever to enteric fever. This case is in a very precarious condition."

July 28th.—"One man died during the week from enteric fever (*Æt.* 20; first season in India; ill 16 days)."

July 28th.—"One man's disease was changed from ague to enteric fever."

August 4th. "The case of enteric fever is progressing favorably."

August 18th.—"One man's disease was changed during the week from simple continued fever to enteric fever. The case proved fatal (*Æt.* 26; 6 days ill)."

September 15th.—"A case of diarrhœa was changed to enteric fever. Two cases of enteric fever, two of which died, have occurred in two companies. The removal of these companies to other ground has been recommended."*

September 22nd.—"One case of simple continued fever appears changed to enteric fever. One death from enteric fever is shown in this return. No *post-mortem* examination was made."

September 29th.—"The health of the company which contributed the majority of enteric cases, has been highly satisfactory since it changed camp. One case of enteric fever has been admitted from the company that remains on the old camping ground since last return."

November 3rd.—"One man was admitted with enteric fever, and died on the 3rd instant."

Cherat, Detachment 1-6th Regiment.

July 21st.—"The sanitary state of the detachment and its encampment are satisfactory."

July 28th.—"One man's disease was changed from continued fever to enteric fever, and terminated fatally (*Æt.* 21; 11 days ill)."

August 4th.—"One disease changed from diarrhœa to enteric fever." The case was discharged on the week ending 1st September.

A case of enteric fever admitted on 15th September, was discharged on the week ending 20th October.

Peshawur, A Brigade, A Battery, Assistant Surgeon Bate.

April 28th.—"A case admitted under the head of simple continued fever has become enteric; or rather, I should say, the case turned out to be typhoid fever."

May 19th.—"All cases progressing well, except the case of enteric fever." He was discharged in the week ending 16th June.

July 28th.—"One man's disease was changed from simple continued fever to enteric fever The patient is in a dangerous state.

August 4th.—"The case of enteric fever previously reported is doing well."

September 15th.—"A fatal case of enteric fever occurred (*æt.* 19; 16 days ill). The patient was a weakly recruit, six months in Peshawur. He was admitted on 29th August for general debility. On the enteric fever becoming well-marked the disease was changed. The whole of the small intestines were congested, and in the ileum there were several patches of ulceration. The large intestines were also congested, and were ulcerated at the cæcum and to some extent upwards. The mesenteric glands were enlarged and congested.

---

* On the supposition that the ground occupied might have been saturated with organic impurities, or the men exposed to the effluvia from a ravine in which the excreta unburied from previous years were deposited.

September 29th—"The serious case of remittent fever, mentioned last week, has been changed to enteric fever. The patient is improving. Another case of remittent fever has been changed to enteric fever; this patient is in a dangerous state."

October 26th.—"The two serious cases of enteric fever are improving."

22nd Brigade, B. Battery, Royal Artillery, Asst. Surgeon Hunt.

May 26th.—"A bad case of dysentery is under treatment. The dysenteric symptoms have been absent for some days, and typhoid symptoms have developed themselves."

June 9th.—"The case of enteric fever is improving." He was discharged in the week ending 30th June.

July 7th—"One disease, changed from remittent fever to enteric fever during the week, proved fatal."

H. M.'s 1-6th Regiment, Surgeon Woodward.

June 23rd.—"Two casualties during the week from enteric fever (*Æt.* 19; 20 days ill: *Æt.* 26; 10 days ill). The disease was changed in both cases from simple continued fever."

June 30th.—"One death during the week from enteric fever. The case is the same which appears changed from simple continued fever (*Æt.* 24; 17 days ill)."

December 1st.—"One case changed from simple continued fever to enteric fever)."

December 15th.—"The case of enteric fever has been very ill, but is now slightly better." The man was remaining in hospital at the end of the year.

H. M.'s 2-60th Regiment, Surgeon Macnamara.

January 13th.—"A man, who was in hospital some time under the head of ague, has had his disease changed, and he now appears under the head enteric fever, the eruption characteristic of which has appeared on him a few days ago. It is conjectured that he contracted the disease while encamped at Meean Meer *en route* to this station." He was discharged in the week ending 10th February.

June 16th.—"Two deaths occurred. In both cases the patients were mere boys, recruits who joined in the last draft from England (*Æt.* 18 and 19.)" These are returned as cases of remittent fever.

June 23rd.—"One patient, whose disease appeared to be remittent fever, died. The *post-mortem* disclosed lesions of the Peyerian patches of glands in lower part of ileum. The disease was, therefore, changed to enteric fever."

SECTION III.

EXPERIENCE OF THE NEW REGIMENTS WHICH CAME TO INDIA IN THE END OF 1870 AND IN THE EARLY MONTHS OF 1871.

Distribution by Age of the Strength of the New Regiments of 1870-71.

STRENGTH ON ARRIVAL IN INDIA.

Regiment	Station	Under 20	20-24	25-29	30-34	35-39	40& up	Total.
56th...	Poona ...	539	155	82	76	43	2	897
63rd...	Hazareebaugh	178	332	173	192	43	5	923
65th...	Agra ...	374	161	279	86	13	11	924
72nd...	Umballa ...	210	356	143	143	50	5	907
89th...	Cannanore ...	83	420	188	165	40	16	912
	TOTAL ...	1,384	1,424	865	662	189	39	4,563
Died in the first 12 months		5	34	21	10	4	4	78

The statistics of these regiments agree in their essential details with what is shown in the standard of 1864-69.

At first sight, the table showing the aggregate of sickness and mortality in newly arrived regiments during 1871, appears to differ widely from the standard which I laid down in the report of last year, deduced from the experience of new regiments which arrived between 1864 and 1869. And yet, when the essential details come to be studied, the statistical history is the same. It is, as I remarked in the former report, the excess of normal climatic influence, and the prevalence of epidemics that chiefly influences the death-rate in the newly-arrived. Epidemics had no influence on the death-rate of 1871; not one of these regiments suffered from malarious fever, and not a single death from cholera occurred in the body. Heat influence also was at a minimum. The conditions required to produce fatal heat apoplexy were almost entirely absent, and three men only out of a total of 4,500 succumbed to this disease. Exposure to heat influence in excess, tells chiefly against the old soldier new to India; but in 1871, the favourable character of the season determined for the old soldiers of new regiments a death-rate of 20 in the 1,000, against 47 per 1,000 shown in the standard of 1864-69 for men of the same age.

Composition of the Death-rate of the newly-arrived regiments.

Taking the body as a whole, the death-rate was 17·84 per 1,000, against 16·44 for the Army of India, and 17·12 for the Army of Bengal, which were the rates exclusive of cholera.

But the details of this death rate are very different:—

Death-rates per 1,000 of Strength.

	Army of India, 1871.	New Regiments of 1871.
Fevers	. 3·36	... 8·46
Apoplexy ...	... ·83	... ·68
Hepatitis ...	... 2·73	... ·68
Dysentery ...	... 1·34	... 2·74
Phthisis ...	... 1·53	... 1·60
Heart disease	.. 1·63	... 1·15
All other causes	... 5·02	... 2·53
TOTAL	... 16·44	... 17·84

Diseases of the unacclimatised—enteric fever, dysentery, phthisis.

The three diseases special to the unacclimatised come as usual to the top—fever, dysentery, and phthisis. It is most remarkable on looking back to the standard of 1864-69, to find that the fever-rate is absolutely identical with that of 1871, being in either case 8·46 per 1,000. This high death-rate of 1871 proves, that the climatic causes determining death in the young men are very different from those which determine death by Heat Apoplexy, in other words, the extent of mortality from Heat Fevers is not to be gauged by the extent to which the manifestation of Heat Influence in Heat Apoplexy has been exhibited. Heat fevers indeed have proved fatal, almost in every instance, only after having assumed the aspect of true enteric fever. The fever-ratio represents 37 deaths, and all of these, with five exceptions, occurred among men of 26 years of age and under. Of these deaths, 23 are entered as due to enteric fever; and if we estimate that three-fourths of the whole were actually caused by enteric fever, the estimate is within the mark.

The typhoid of the young the great characteristic of the death-rate of the body.

Let me repeat here once again, with reference to this illustration: not only is it a fact, that the young soldier dies from enteric fever, but beyond this fact there lies the great truth, that enteric fever is the one disease of India by which the young soldier dies. Dysentery and phthisis come in to swell the death-rate; but while our new regiments are in cantonments it is typhoid that rises to the head, at least in Northern and Western India. Men of 26 and under furnished, in the case under consideration, 51 out of 78 deaths; and of these 51 deaths, 32 were caused by fever, 8 by dysentery, and 4 by phthisis, thus leaving 7 deaths only out of the whole to be accounted for under other heads.

Composition of the admission-rate compared with the standard of 1864-69.

It is very remarkable to find, on comparing the admission-rates of the new regiments with the standard, that the three great causes of sickness in the newly-arrived give almost identical results:—

Admitted per 1,000 *of Strength in First Year of residence in India.*

	Standard of 1864-69.	New Regiments of 1871.
Remitted and Continued Fevers ..	383·9	386·1
Enteric Fever	(?)	11·0
Dysentery	66·2	60·8
Phthisis Pulmonalis	12·2	13·5

Great prevalence of heat fever not inconsistent with a high standard of health in a newly-arrived regiment.

Experience of Her Majesty's 56th Regiment cantoned at Poona.

Last year, I made the remark, that it seemed of comparatively little consequence whether the young men suffered from heat fever in the first year or not; and that on many occasions when they did suffer, the constitution was better adapted to the climate of India than before. It is a fact well worthy of notice, that Her Majesty's 56th Regiment, which landed from England in April, had, in the nine months of 1871, out of 746 admissions on account of heat fevers, not a single death. This fact shows how it is possible for the acclimatising process to be carried out with scarcely any loss; and it teaches how important is the selection of a suitable station. Out of 900 men of this regiment who landed from England, four only died in the first nine months—two boys from phthisis and dysentery, and two old soldiers from aortic aneurism and hepatitis. Along with the 56th, was cantoned the 83rd Regiment, which arrived from England in April 1870. This regiment, in its second year, out of an equal strength, had but 122 admissions from fevers returned as remittent and continued. To any one accustomed to review the statistics of Indian disease, the fact that these two regiments, 1,800 strong, had but six admissions from hepatitis during 1871, stands out as unique. There was in the same body but one death from dysentery, and two from phthisis. And coincident with this most striking immunity from the effects of climatic disease, not a single case of typhoid was returned from either regiment. The experience of Poona, of 1871, fulfils every condition which the sanitary officer desires to see in the case of bodies of men newly landed in India. The 56th Regiment landed in April 1871, with 539 boys, out of a total strength of 897.

Contrast in the case of Her Majesty's 89th Regiment cantoned at Cannanore in Southern India.

Another new Regiment, Her Majesty's 89th, occupied Cannanore in Southern India. It is very instructive to contrast the statistics of this regiment with those which I have just now referred to. The damp moisture of Southern India tended to produce in this unacclimatised regiment the reverse of what we find further to the north; exaltation of function was carried to excess in the case of the intestinal system, and fevers were diminished in relation to the increase of intestinal disease. Against the 746 admissions from heat fevers at Poona, the 89th Regiment shows 186 cases only; but, as an offset, while the 56th had but 24 cases of dysentery and 1 death, the 89th had 176 cases of dysentery, and lost 17 men by death and invaliding from the same cause. Pulmonary phthisis, the third disease which we find so readily developed in the young and unacclimatised, also came forward in the 89th Regiment, and at the close of the year, 9 men were sent home invalided on this account.

This young regiment, coming direct from Ireland, appears to have experienced great heat on landing, and suffered excessively immediately afterwards; many of the cases of fever assuming the enteric type. The first three weeks of January seem to have been very hot in this part of India. It is mentioned in the return of the Malliapoorum detachment of this regiment, of 20th January, that showers had fallen, which had tempered the great heat; and in the Calicut detachment a case of heat apoplexy took place on the evening of the 19th.

Surgeon Sparrow does not tell us that he brought the typhoid with him from Ireland, as others have alleged. To his return for the same week, the 20th January, he appends these remarks: "The sudden change to a warm climate appears to have been the exciting cause. Fifty-three cases of low fever have now been under treatment. With one single exception, all these occurred in young soldiers. Quinine and other specifics have been useless; the disease appears to run a certain course unchecked by any remedy."

At the close of the year, five cases of enteric fever appeared between the end of November and the beginning of January. In the return which notices the first of these cases, it is mentioned that the days are intensely hot, with cold land winds at night.

Experience of Her Majesty's 72nd, 65th and 63rd Regiments, belonging to the Army of Bengal.

Of the three regiments which came to Bengal in 1871, the 65th cantoned at Agra suffered most. But all three regiments enjoyed the benefit of a most favourable season. The death-rate of the 72nd, stationed at Umballa, and having a large detachment in the hills, was 12·14 per 1,000; the 63rd, at Hazareebaugh, had a death-rate of 17·35; and the 65th lost at the rate of 25·00 per 1,000.

The 65th had 17 deaths, out of 312 cases of remittent and continued fever; the 63rd lost 7, out of 208 cases; and the 72nd, 3 out of 224 admissions. Of these 27 fever deaths nearly all were caused by enteric fever. The young men died, and not the old. Out of the 17 fatal cases in the 65th, in two instances only did the age of the man who died exceed 26; in the 63rd, 5 out of 7, were below 25; and in the 72nd, the three deaths were at the ages of 19, 21, and 26.

Besides the favourable character of the season, the fact of the removal to the hills of all the boys of the 72nd had evidently a marked influence upon the statistical results of the regiment. Dr. Munro's experience in the case of the 92nd, which suffered heavily at Jullundur in 1868, in its first year, suggested to him the expediency of placing, immediately on their arrival, as many of the young men as possible beyond the effects of the extreme of climatic influence. Surgeon Meane recognises the good results which followed the precautionary measures taken in regard to his regiment in the following terms:—

"Owing to the good climate of Umballa, and the great care taken of the men of the regiment in preserving them from any degree of exposure during the hot weather, together with the fact of all our young soldiers (those under 20 years of age) being sent to the hills for the hot months (for which I have to thank especially Dr. Munro, C. B., Deputy Inspector General), no great amount of serious illness has occurred."

This regiment developed four cases of typhoid only, of which two were fatal. As these came forward seven months after the regiment landed, it is vain in this instance to seek evidence of importation.

I have had no opportunity of seeing any special report by the medical officer on the typhoid of the 65th. The history of typhoid runs through all the weekly returns, as the extracts quoted in the last section show; but the extent to which the disease prevailed in the regiment does not seem to have been fully realised.

The typhoid of Her Majesty's 63rd was carefully watched, and the clinical observations of Assistant Surgeons Hannah and O'Farrell have formed an important contribution towards the history of enteric fever in India. Surgeon Robotham, who writes the medical report of the regiment for 1871, regards a foul encamping ground as the cause of the appearance of typhoid in his regiment. His remarks are not made as the result of personal observation, as he succeeded to the charge of the regiment eleven months after the alleged occurrence took place. Surgeon Robotham writes:—

"Seventeen cases of true enteric or typhoid fever occurred. This disease, in my opinion, was first contracted on the march to this station in December 1870. The regiment halted at Burrakur, the nearest railway station of the East Indian Railway. Here they found a standing camp left by the 107th regiment, which the 63rd relieved. This camp was reported to be very dirty, from the number of camp-followers. The water was inspected and found exceedingly bad, the tank from which it was mostly procured having been used for washing, and also for watering cattle. The ravines intersecting the camp had been freely used as a latrine for natives. In the general confusion of a regiment, entirely fresh to the country, taking over camp equipage, stores, &c., sanitary precautions were to some extent neglected, and the consequences were seen in an outbreak of enteric fever which followed the regiment into the station, and continued up to the autumn of 1871. This disease has now quite left us, and there has not been an admission from enteric fever since November."

Surgeon Robotham recognises the presence of the phthisis of the unacclimatised in his regiment as follows:—

"I attribute the large number of cases of phthisis, twenty-seven, to the very large number of ill-fed and ill-nourished young recruits that joined the regiment before leaving England for India; 178 boys under 20 years were brought out to this country in the 63rd regiment in 1870."

The invaliding of these five regiments, taken as a body, approaches very closely to the standard of 1864-69 for regiments in the first year, both as regards the total invaliding-rate and its details.

Causes of Invaliding in Newly-arrived Regiments, 1871.

Characteristics of the invaliding of these five regiments as a body, and the close approximation of details to those of the standard of 1864-69.

Phthisis	24	Mental affections ...	9
Heart affections ...	16	Epilepsy	3
Dysentery	12	Syphilis	4
Hepatitis	13	Rheumatism	3
Debility from climate ...	12	All other causes ...	21

These 117 cases give an invaliding-rate of 27 per 1,000. The standard-rate of 1864-69 is 29 per 1,000.

The composition of the Invaliding-rate of the New Regiments of 1871, *compared, as regards the details, with the standard rate of* 1864-69.

INVALIDED PER CENT. OF TOTAL INVALIDING.

	Regiments of 1871.	Regiments of 1864-69.
Phthisis pulmonalis ...	20·51	... 22·73
Hepatitis	11·11	... 11·72
Dysentery	10·26	... 11·49
Heart disease	13·68	... 7·90
Debility from climatic disease	10·26	... 12·44
All other causes	34·18	... 33·72
	100·00	... 100·00

Out of 16 cases of heart disease, 12 occurred in young men under 25. No death from heart disease occurred in the young; the four men who died were old soldiers.

REGIMENTS IN THE FIRST YEAR OF INDIAN SERVICE, 1871.

Table showing the Sickness and Mortality in Newly-arrived Regiments during 1871, *and the prevalence of the princip Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Enteric Fever.	Remittent and Continued Fevers.	Heat Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other causes.	Died out of Hospital.
January ...	4,436	223	50·3	12	...	...	...	7	2	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...
February ...	4,404	190	43·1	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	..	...	...	...	...	...
March ...	4,445	176	39·6	4	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
April ...	4,468	191	42·7	7	...	...	...	1	2	...	...	1	...	1	...		1	...	...	...	...	...	...	1
May ...	4,405	236	53·6	11	...	...	...	1	3	1	...	3	...	...	...	..	2	1	...	...	...	...	...	...
June ...	4,327*	242	55·9	6	...	...	...	1	1	2	...	1	...	...	...	...	...	1	...	...	...	..	...	...
July ...	4,294	289	67·3	7	...	...	...	2	3	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
August ...	4,281	266	62·1	7	...	...	...	3	...	...	...	1	...	...	...	...	...	1	...	..	...	...	1	1
September ..	4,242	214	50·5	7	...	...	...	4	1	...	...	1	..	...	1	...	...	...	...	...	...	...	...	...
October ..	4,313	212	49 1	8	...	...	...	2	1	...	...	3		...	...	...	..	1	...	...	...	...	...	1
November ..	4,454	227	51·0	4	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1
December ...	4,397	213	48·4	3	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
						...	...	23	14	3	...	12	...	3	2	2	5	7	...	...	...	...	2	5
						Died per 1,000 of the Average Strength.																		
For the year ...	4,372	223	51·0	78	17·84	......		8·46		·68	...	2·74	...	·68	·46	·46	1·15	1·60	...	...	...	...	·46	1·1

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total admitted during the year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera	...	...	..	...	...	...	1	...	...	...	1	...	2	·5	......
Smallpox	1	..	1	1	...	..	...	...	...	...	...	...	3	·7	... ..
Enteric Fever ...	21†	1	1	1	4	5	3	4	1	1	3	3	48	11·0	47·9
Intermittent Fever ...	25	12	13	18	8	66	89	48	33	57	34	27	430	98·4	......
Remittent and Continued Fevers	64	39	53	125	274	165	279	260	150	117	116	46	1,688	386·1	·8
Heat Apoplexy ...	1	...	...	...	2	2	1	...	1	...	...	...	7	1·6	42·9
Delirium Tremens ...	3	...	1	2	2	...	4	5	1	2	1	3	24	5·5	...
Dysentery	13	16	5	11	20	25	26	54	25	21	16	34	266	60·8	4·5
Diarrhœa	23	27	32	27	16	24	20	23	21	18	10	12	253	57·9	... ...
Hepatitis	6	6	6	5	7	15	10	9	5	10	9	8	96	21·9	3·1
Spleen Disease ...	...	...	...	1	..	1	...	...	1	...	...	1	4	·9	... ...
Respiratory Diseases ...	18	13	12	23	20	19	15	19	13	9	16	9	186	42 5	1·1
Phthisis Pulmonalis ...	3	1	2	5	5	4	9	3	5	6	12	4	59	13·5	11 9
Scurvy	..	...	...	...	...	1	...	...	...	...	...	...	1	·2	·4
Rheumatism ...	18	9	10	13	17	11	16	13	9	18	10	11	155	35·5	
Venereal Diseases	135	70	68	57	71	67	63	62	40	63	73	113	882	201·7	
Eye Diseases ...	16	14	18	27	19	17	20	32	12	16	14	6	211	48 3	
Abscess and Ulcer ...	29	22	32	47	44	36	37	43	14	28	32	27	391	89·4	
Wounds and Accidents ...	31	28	26	48	41	27	21	19	14	19	25	15	314	71·8	
All other causes ...	44	53	50	76	61	55	61	50	33	62	37	36	618	141·4	
	451	311	330	487	611	540	675	644	378	447	409	355	5,638		
	Admitted per 1,000 of the Average Strength in each Month.														
	101·7	70·6	74·2	109·0	138·7	124·8	157 2	150·4	89·1	103·6	91·8	80·7	1289·6		

---

* The strength is diminished by men being sent to Convalescent Depôts.

† Of these cases, 15 occurred in the 89th Regiment at Cannanore.

APPENDIX E.

ON A

HÆMATOZOON INHABITING HUMAN BLOOD:

ITS RELATION TO CHYLURIA AND OTHER DISEASES.

BY

TIMOTHY RICHARDS LEWIS, M.B.,

ASSISTANT-SURGEON, H. M. BRITISH FORCES;

ON SPECIAL DUTY, ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

APPENDIX E.

ON A HÆMATOZOON INHABITING HUMAN BLOOD:

ITS RELATION TO CHYLURIA AND OTHER DISEASES.

BY

T. R. LEWIS, M.B.

The belief in the existence of Human Hæmatozoa long entertained.

For many generations writers on medical subjects have maintained that the human blood during certain diseased conditions is invaded by parasites. The opinion most in favour has been that these in all probability were in the form of worms; but, so far as I have been able to ascertain, it has never yet been satisfactorily demonstrated that this condition really existed.

The Distomata hitherto discovered are too large to pass through the capillaries;

That certain limited areas of the circulatory tract may become invaded by Entozoa has long been known: the portal vein and the vessels in more or less direct relation with the intestinal canal are the channels which have usually been thus affected; but the parasites found in these situations, such as the Distoma hæmatobium, discovered by Bilharz in 1851, and a few other imperfectly described distomata, are far too large to pass through any but comparatively capacious blood vessels. The instances on record in which they have been found in vessels beyond these limits are few, and evidently accidental occurrences. None of these, therefore, can, I think, be justly described as 'Hæmatozoa' in the strict sense of the term.

So likewise are Echinococci.

The same remarks apply, with only very slight modifications, to the presence of Echinococci in the blood vessels, a few young specimens of which have on rare occasions been discovered (by Klencke and others) in the general circulation, but then only in vessels of considerable calibre.

Probability of some parasites having reached the tissues in which they are found, by means of the blood-vessels.

It has also been inferred that the progeny of some Entozoa must be carried by the blood-current, as otherwise they could not have reached their destination so rapidly in the various distant parts of the body in which they have been found. That the Trichina spiralis, for example, during its earlier migrations, may be conveyed in this way, is, although strongly denied, I think not improbable. As their presence in the blood has not, however, been recognized, either in man or in animals, their sojourn in such channels must at all events be of very short duration.

The discovery of microscopic worms in great numbers in human blood.

But that a condition should exist in which human blood should be infested by living active worms in either an embryo or mature state, to the extent hereafter to be described, had, I presume, scarcely been surmised—a condition in which they are persistently so ubiquitous as to be obtained day after day in numbers, by simply pricking any portion of the body, even to the tips of the fingers and toes of both hands and both feet of one and the same person, with a finely pointed needle. On one occasion six excellent specimens were obtained in a single drop of blood by merely pricking the lobule of the ear.

Date of their discovery in the blood and of their discovery in the urine.

Towards the beginning of July of the present year, whilst examining the blood of a native suffering from diarrhœa, a patient at the Medical College Hospital under Dr. Chuckerbutty's care, I observed nine minute Nematoid worms in a state of great activity, on a single slide. On drawing the attention of my colleague, Dr. Douglas Cunningham, to the preparation, he fully coincided in my opinion that they were precisely the same kind as those observed by me more than two years previously (in March 1870), as being constantly present in Chylous urine.

A synopsis of the first case published.

In a report on the microscopic characters of choleraic dejecta published at the time, both separately and also in the form of an Appendix to the Sixth Report of the Sanitary Commissioner with the Government of India, I had occasion to allude to this condition of the urine in connection with some cells observed in it, which closely corresponded in appearance with cells constantly present in choleraic discharges, and the opportunity was taken of drawing attention to the Entozoon, which was at the same time figured and described.

For the sake of convenience it may be well to refer to this case again. The patient was a deaf and emaciated East Indian, about 25 years of age, under the care of Mr. R. T. Lyons at the General Hospital, and was kept under observation for a period of two months, during which time his urine continued to present a white, milky appearance, and yellowish-white coagula rapidly formed in the vessel into which it had been voided. When a small portion of the gelatinised substance was teased with needles on a slide, and placed under the microscope, delicate filaments were seen, partly hidden by the fibro-albuminous matter in which they were embedded, and which I at first considered to be scattered filaments of a growing fungus. After being watched for some time, however, they were seen to coil and uncoil themselves, so that all doubt as to their nature was at an end. I had opportunities of showing them on various occasions to several persons, and having perfectly satisfied myself that their occurrence was not accidental, nor yet the result of subsequent development in the urine, after the manner of the Anguillulæ which are so well known to develop in vinegar or starch-paste, I did not hesitate to draw attention to them as being the probable cause of the obscure disease known as "Chyluria."

How and where subsequent cases were obtained.

From this period I have paid considerable attention to the subject, and I desire to express the obligations I am under to Dr. Ewart, the Surgeon in charge of the Presidency General Hospital; to Dr. D. B. Smith, the Officiating Principal of the Medical College; to Dr. Edmonston Charles, Professor of Midwifery at the same College, and to Dr. McConnell, the Professor of Pathology, as well as to several others, for the opportunities afforded me for the study of this and of allied conditions of the urine.

Probable group of Nematodes to which the Hæmatozoon belongs.

A slide containing one or more specimens of this Nematode having been forwarded to Professor Parkes, at Netly, he very kindly showed it to Mr. Busk, whose extensive knowledge in this department of science is well known, and the opinion was expressed by him, that, so far as could be judged from the form and size alone, the worm seemed to belong to the *Filaridæ.*

At this time it was not known to exist in the blood, nor had its minute anatomy been accurately ascertained; however, I do not anticipate that the information acquired since that time would materially alter Mr. Busk's opinion, so that perhaps the name already applied to the Hæmatozoon in the columns of the 'Lancet,' *Filaria Sanguinis hominis*, may provisionally be adopted.

Chyluria appears to be more prevalent among women than among men.

I am indebted for the greater number of the specimens of Chylous urine which I have examined to Dr. Charles, who and Dr. W. J. Palmer were, I believe, the first to verify the observations which I had published, both having had cases of the disease about the same time towards the end of 1870 or beginning of 1871. The fact of Dr. Charles, being in charge of the midwifery wards of the College Hospital, has apparently conduced to his being able to aid me so materially, as, strange to say, the patients suffering from Chyluria have, for the most part, been women; in the last case brought to my notice by him, this condition was observed, for the first time, four days after podalic version had been performed.

Number of cases of Chyluria observed.

I have now observed the urine in this condition, associated with more or less marked hæmaturia, in from fifteen to twenty patients, several samples having been obtained from nearly all of them; *these microscopic Filariæ have been present on every occasion*. Of the persons thus affected, five were ascertained to be of pure European parentage, but three of them were born in this country; the remainder were either East Indians or Natives, in about equal proportion.

Particulars concerning the patient in whom the Hæmatozoon were first discovered.

I regret that I lost opportunity of fully ascertaining the previous history of the case in which the Hæmatozoa were first detected. Having satisfied myself of the identity of the worms previously observed in the urine and now in the blood, by careful comparison of their form, structure and measurements, I returned on the following morning to the Medical College for this purpose, but to my great disappointment found that the man had been discharged, at his own request, an hour before my arrival. He had, it appears, suffered from diarrhœa for about a fortnight, which had become greatly aggravated a few days before his admission into hospital; but nothing further could be learnt of the state of his health beyond that he had complained of deafness, especially of one ear.[*]

He had left no address, except that he was a blacksmith living in a large bazaar in the neighbourhood; but as some three or four thousand persons are crowded into this bazaar, a great proportion of whom are smiths in some form or another, those acquainted with the intricate geography of such places in the East will not be surprised to learn that I spent a whole afternoon searching for him in vain. I then enlisted the friendly aid of the Police, but this also proved fruitless.

A second case of Filariæ in the blood, associated with Chyluria.

A few days after this occurrence Dr. D. B. Smith informed me that there was a native woman in one of his wards suffering from hæmaturia combined with a chylous condition of the urine, and very kindly forwarded a specimen of it on the following morning; this urine, as usual under such circumstances, contained the worms in abundance.

First and second attack.

I saw the woman on the evening of the same day, and learnt that the complaint from which she was suffering had first made its appearance during the third month of her last pregnancy, but that it had apparently passed off in about five or six weeks. After the birth of this child, which was now five months old, the disease came on again, she was unable to suckle her infant, the lacteal secretion being altogether absent.[†]

On pricking her finger with a needle and distributing a drop of blood over several slides I found that the Filariæ were present in it also.

Other symptoms, and progress of disease.

She remained under observation for a period of about two months, but there was no marked change in her general condition; her face, however, became swollen on one or two occasions, and appeared puffy, as also did the upper and lower extremities. The urine slightly improved in appearance, and the numbers of the Filariæ in it as well as in the blood diminished; in the latter especially, at all events, the numbers obtainable by pricking the fingers or toes certainly decreased; and eventually, out of half a dozen or more slides not more than one or two Hæmatozoa could be detected: on a few occasions several slides were examined without any being found.

---

[*] One of the patients brought to my notice, who had suffered from Chyluria for several months, had been in hospital for another complaint and had actually left the hospital without having mentioned a word about the condition of his urine. He stated afterwards that he did not like to do so as it was no great inconvenience to him, and he imagined it was the temporary result of an 'indiscretion.'

[†] A case is recorded by Drs. Mayer and Pearse as having occurred in the Madras Presidency, in which a young East Indian woman had suffered after two pregnancies in this manner; she continued to suckle her children uninterruptedly, but on being advised on the last occasion to discontinue doing so, the urine returned to its natural appearance. *Brit. and For. Med.-Chir. Review*, Vol. III, 1852, page 511.

The patient, however, could not be persuaded to remain longer in hospital: indeed, all patients thus affected soon get tired of being treated for their complaint, as there is seldom any great suffering which the patient can directly connect with this condition, and often no other very well marked symptom, beyond general debility.

A third case of Filariæ in the blood, associated with Chyluria.

The most remarkable case which has come under my notice, in which the blood was affected in this manner, was that of a patient in one of Dr. Ewart's wards, whom he kindly placed at my disposal for observation and treatment. The man was an East Indian (with more of the habits of the native than of the European), about 22 years of age; he had been for about five years employed as cook on board one of the light-ships lying at the entrance of Hooghly, spending only about three months of the year with his family on shore.

The prominent symptoms in this case were, extreme and persistent milkiness of the urine, which coagulated with great rapidity after being voided. On being heated the smell given off at first corresponded exactly with that of warm milk, but when the heat was continued for some time, was gradually replaced by the ordinary smell of urine. This condition came on *suddenly* about two months previous to his admission into the General Hospital.

Other prominent symptoms.

He dates his illness, however, as having commenced about a year before, for his sight then became affected, and there was 'inflammation' of both eyes, together with a copious discharge of fluid from them. These symptoms have persisted, although he thinks that they have somewhat subsided since the change occurred in his urine. He has well marked 'granular lids,' the mucous membrane of both the upper and lower lids are red and swollen, and the sclerotic conjunctiva injected, the vessels being large and tortuous; there is also considerable opacity of the cornea. He presents a somewhat emaciated appearance, although his appetite had always continued good, and certainly since his admission into hospital the man has gladly availed himself of the most liberal scale of diet allowed.

Extreme extent of infection.

This is not surprising when the amount of fibro-albuminous matter which is constantly being drained from his system, as evidenced by the state of the urinary secretion, is taken into consideration, but when to this is added the fact that no matter at what portion of his body the circulation is tapped with the point of a needle, numerous active, well-developed Hæmatozoa are invariably obtained: on one occasion I obtained as many as twelve of these creatures on a single slide. As the drop of blood from which this slide had been prepared sufficed for the preparation of two or three other slides (which, however, between them did not contain more than half a dozen Filariæ), the number infesting his whole body may be imagined.

Approximate number of Hæmatozoa present in the body.

A rough calculation may very readily be made; the weight of the man is 100℔; if the amount of blood be taken as being on the average 'not less than one-tenth of the weight of the body' (Huxley), and it is assumed that each drop or grain rather contains, say, two Hæmatozoa, it would be but a reasonable estimate to set down the number as 140,000! It must, however, be borne in mind that the Hæmatozoa may be more or less localised to the capillaries and smaller vessels, which would materially modify this estimate, still I know of no fact which warrants any such assumption.

The number in the urine.

The urine also contained numerous Filariæ, but they were by no means so plentiful in this fluid as the condition of the blood might have led one to expect. I have seen them far more plentiful in the urinary secretion of a person whose blood did not appear to be infected to anything like the extent to which this man's had been.

Chylous (?) discharge from the lachrymal and adjoining glands.

On several occasions I attempted, but in vain, to detect the Filariæ in the copious slightly milky secretion constantly welling out of the corner of his eyes, and which in a slight degree appeared to curdle. I feel convinced however that could a sufficient quantity of this secretion be accumulated they would be discovered.* Microscopically the discharge consisted of clear fluid with numerous granular cells, precisely as observed in the urine of persons suffering from Chyluria. The re-action of the fluid was slightly alkaline.

A fourth case of Hæmatozoa associated with Chyluria.

Before alluding more minutely to the appearances presented by the Hæmatozoon, I will refer to one other case, for the opportunity of observing which I am again indebted to the Principal of the Medical College, under whose care the patient was. She was the wife of a police sergeant, 30 to 35 years of age, born in this country, but of pure European parentage. Towards the end of July last she was admitted into hospital suffering from a chylous condition of the urine, with frequently recurring attacks of hæmaturia.

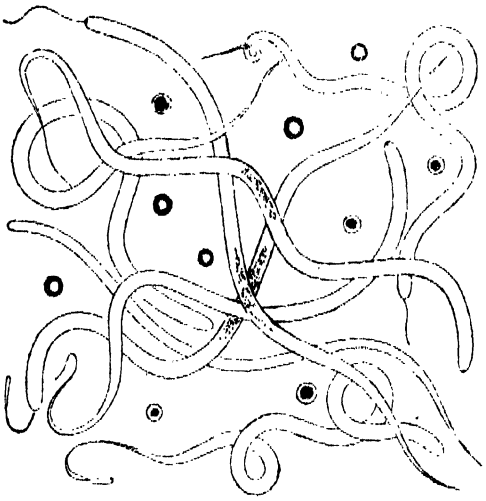


FIG. I 300

Living Hæmatozoa observed in a single preparation of blood obtained from the finger of a European woman suffering from Chyluria.

A few red-blood corpuscles have been introduced to show the relative size of the Filariæ.

First attack:

The disease made its appearance two months after child-birth, 16 years ago, when she was living a few miles from Calcutta—at Hooghly. It continued for six months, and in her opinion was cured by taking an infusion of the seed of an aromatic plant used by the natives for flavouring curries called "*kahlajeera*," a species of Nigella (sativa?).

Second attack:

In the following year she was again confined, but the symptoms did not return; in 1859, whilst residing at Rajshaye, the disease re-appeared. She was then neither pregnant nor nursing. In three and a half months the symptoms subsided, the above-named native remedy having been administered as before.

Third attack.

Since this period she had given birth to two more children, the last child having been born in 1864; but no symptoms of her complaint had appeared until within a few days of her admission into Dr. Smith's ward, when they came on suddenly after a lapse of eight years. During the first three weeks of her stay in hospital no marked alteration in her condition was observed, neither for better nor for worse—Hæmatozoa were persistently present in her blood, no matter from what portion of her body the fluid was obtained; they were also present in the urine.

Fatal termination:

Dr. Smith tried muriate of iron, gallic acid, as well as numerous other remedial agents, mineral and vegetable, not omitting the "*kahlajeera*," in which she had much faith, but none of them seemed to produce the slightest effect. The proportion of blood in the urine increased, painful diarrhœa set in, with rapid emaciation, and she died about six weeks after her admission.

Post-mortem examination.

It was with considerable difficulty that permission was obtained to make a *post-mortem* examination, which had moreover to be so hurriedly performed that Dr. McConnell, the Professor of Pathology, was unable to give me notice; but he has most kindly placed at my disposal the careful notes which he made of the appearances presented by the various viscera (fourteen hours after death), a summary of which is here given.

---

* Since this portion was in type the inference above made has proved to have been correct, as I have obtained a specimen of the Filariæ in the midst of a shred of flocculent matter, which had been transferred from the inner surface of one of the lower eye-lids on to a glass side, for examination.

Its breadth was $\frac{1}{7800}$ of an inch and its length $\frac{1}{150}$", the relative proportion between the latter and the former being therefore as 1 to 52.

Condition of the brain and of the thoracic viscera.

The brain was soft and somewhat anæmic; otherwise there was nothing special to be observed in its structure, nor in its ventricles. The right side of the heart contained small semi-decolorised clots, as also did the left auricle, but the ventricle was empty. There was some thickening of the mitral valve, and slight, irregular thickening of the lining membrane of the aorta—further than this there seemed to be nothing abnormal. The mucous surface of the trachea and bronchi appeared to be healthy. Scattered throughout the whole of the right lung were numerous specks of what appeared to be softening tubercle, each about the size of a pea; in addition to which two circumscribed cavities, one of the size of a hen's egg, the other about half that size, were found in the substance of the middle lobe; each cavity was lined by a distinct "pyogenic membrane" and contained thick muco-pus. The left lung contained a few small, irregularly distributed nodules of softening tuberculous matter, and one cavity, the size of a pigeon's egg, filled with muco-pus. The weight of the right lung was 5 ounces and 6 drachms, and that of the left was 8 ounces and 4 drachms.

Condition of the intestine and other abdominal viscera.

The mucous membrane of the stomach was of a bright pink colour, not altered in consistence, whereas the mucous surface of the duodenum presented a mammilated and congested appearance. The jejunum and ileum in the upper half were healthy, but in the lower half of the latter the Peyer's patches were prominent, and the surface covered with minute ulcers—the glandules infiltrated with a yellowish-white, soft, tubercular-like substance; the edges of the ulcers thickened and containing similar yellowish-white granular matter. The lining membrane of the cœcum and ascending colon was of a bright pink colour, and exhibited five or six circular ulcers about the size of half a pea, with raised and opaque white edges. The entire contents of the intestines consisted only of about a couple of ounces of a pea-soup-like fluid. The mesenteric glands were unaffected.

The liver was soft and fatty, otherwise normal in appearance; no re-action with iodine. The gall-bladder was almost empty, containing only a little thin ochre-coloured bile. The spleen seemed to be healthy, as did the uterus and ovaries; the former was small and unimpregnated. The kidneys presented nothing abnormal to the naked eye; the right and left weighed respectively 3 ounces 4 drachms, and 3 ounces 6 drachms: these, together with the supra-renal capsules, were placed in spirit and kindly forwarded by Dr. McConnell for my examination, the result of which will be referred to further on.

As in other cases of Chyluria on record, so in this, not the remotest clue is afforded as to the nature, or as to the cause of the disease by the *post-mortem* appearances visible to the naked eye; nor is there any sufficiently-marked lesion to account for the condition of the urine during life, nor for the rapid manner in which the patient ultimately succumbed.

Method adopted for the detection of Hæmatozoa.

In order to detect the Hæmatozoon during life, the method adopted by me is as follows:—A piece of narrow tape is coiled tightly round the end of one of the fingers or toes, so as to produce a little temporary local congestion of the part, but not to such an extent as to cause the slightest pain; and with a clean, finely-pointed needle the finger is gently pricked—half-a-dozen slides and covering glasses having been previously prepared. The drop of blood thus obtained will suffice for several slides, but I find it a good plan to squeeze out only a very small drop, and transfer it altogether to one slide by drawing the edge of the covering glass along the tip of the finger so as to *scrape* off the 'droplet.' The glass is then carefully pressed on to the slide by a gliding motion, in order to produce as thin a layer of fluid as possible, and to ensure that all the fluid removed is retained beneath the cover, because there is a tendency on the part of the fluid to carry the Hæmatozoa towards the edge of the slide, just as is observed to take place in examinations of the urine for 'casts' of the kidney-tubules.

The slides are now to be carefully and systematically examined; a lateral and horizontal stage-movement being very useful for this purpose, as it enables us to make sure that every part of the preparation has been scrutinized.

Hæmatozoa even when present not always readily detected.

It must not be supposed that the Filariæ are to be detected by taking a mere peep through the microscope; sometimes, certainly, I have observed one, or two even, in the first field examined; but this is by no means usual, and their detection often demands considerable patience. Each slide will require about a quarter of an hour before it can be satisfactorily explored; any one who imagines that they can be detected with the same ease as a white-blood corpuscle had better not make the attempt.

A possible cause of this difficulty.

Several slides may have to be examined, and it may be necessary to make a fresh puncture, for I have found the Hæmatozoa to be absent in several slides obtained from one finger, but present in all the slides obtained from another at the same time; whereas on making a fresh puncture in the finger where none had been found at first, it was ascertained that they were equally numerous in both. This is possibly accounted for by the little orifice made having become plugged by fat, &c., so that the blood squeezed through had to some extent been filtered, for although this microscopic Filaria can pass through any channel permeable to a red-blood corpuscle, still, when it is considered that the length of the former is nearly fifty times its diameter, the wonder is that they are not more completely prevented from escaping through so fine an orifice even when perfectly patent.

The magnifying powers advisable to employ.

The search should not be undertaken with too high a magnifying power, but it should be sufficiently high to define the outline of a red-blood corpuscle quite distinctly. I have found that a good two-third's of an inch objective answers the purpose of a *searcher* admirably; it embraces a tolerably large area so that the preparation can be examined in a comparatively short time; but care should be taken to keep the fine-adjustment screw constantly moving, so as to examine the deeper as well as the superficial layer of fluid in each field as it passes under observation. Should anything unusual be observed, the low power must be replaced by a $\frac{1}{4}''$ or, better, a $\frac{1}{8}''$ objective.*

In order to keep the active Hæmatozoon under observation for some hours, a camel-hair pencil dipped in a solution of Canada-balsam or mastic in chloroform, should be passed along the edges of the covering glass, so as to prevent evaporation, and the formation of air spaces in the preparation.

The general aspect of the Hæmatozoon during life.

The appearance presented by the Hæmatozoon when first seen among the blood corpuscles, in the living state, will not readily be forgotten and cannot possibly be mistaken for anything else. The remark made by a young Bengalee student on my requesting him to look into the microscope and tell me what he saw—"He is an incompletely developed *snake*, evidently very young, though very active"—so aptly describes the object as thus witnessed, that I feel sure that any one seeing the Hæmatozoon alive will not fail to be struck with the accuracy of the quaint reply.

During the first few hours after removal from the body the Filaria is in constant motion, coiling and uncoiling itself unceasingly, lashing the blood corpuscles about in all directions, and insinuating itself between them. It is not at rest for a single moment, and yet on the slide it appears to make but little progress, as it may frequently be watched for an hour in the same field without once giving occasion to shift the stage of the miscroscope. No sooner has it insinuated its 'head' amongst a group of corpuscles than it is retracted, and probably the next instant the 'tail' will be darted forth and retracted in a similar way.

---

* It may seem superfluous to draw attention to the similarity which exists between some vegetable fibres and some of the microscopic 'Filariæ,' when the latter are not alive; nevertheless a very good objective is frequently required to distinguish them with certainty, as any one may prove for himself by subjecting the torn fluffy edges of a piece of blotting-paper to microscopic examination. Filaria-like fibrils will frequently be found.

A mistake of this kind is referred to by Leuckart as having occurred quite recently. A paper was published announcing the discovery of a filaria-like nematode in the intestines, blood, and tissues of a patient, which was expected to prove as dangerous to life as the Trichina spiralis. These parasites subsequently proved to be nothing more than vegetable hairs! 'Die Menschlichen Parasiten,' Vol. II, part 1, p. 151.

Anatomical details visible under a ¼" objective.

One moment it may appear to possess a long 'tail'—a fourth or more of its entire length, which follows it through the fluid like a string, whereas the very next moment not a trace of the 'tail' can be seen, even with the highest powers. The same phenomena can be observed to take place at the thicker, cephalic end, but with more difficulty. As usually seen, this presents a blunt or slightly tapering termination, but every now and then a fine point like a fang appears as if darted straight forward out of its substance; the next instant the creature may jerk its 'head' on one side and the 'fang' becomes bent and drawn after it like a ribbon (Fig. I).

As seen with a ¼" objective, these Hæmatozoa can scarcely be said to present a granular aspect. When only recently withdrawn from the body, they look smooth and almost translucent; the larger specimens, however, frequently present an aggregation of granules towards the junction of the middle with the lower half, as may be seen represented in a few of the specimens delineated (Fig. I). Occasionally also a bright clear spot is observed at the thicker extremity extremely suggestive of an oral aperture; this likewise is represented in some of the figures in the woodcuts.

Duration of their activity.

They will continue thus active under a covering glass, hermetically sealed, for from 6 to 24 or 30 hours, and if a drop of blood be suspended from the centre of a covering glass and fixed to a ring of wax, thus forming a closed cell, the Hæmatozoa may live for three days, perhaps longer, but this is the longest period during which I have known them to retain their activity.

It must not be inferred that the group of Hæmatozoa depicted in this woodcut (Fig. 1) represents *one field* of the microscope, but only that the particular specimens were observed on a single slide. The same remark applies to the second group depicted; except, that two of the figures in it represent Filariæ found in other preparations, obtained from the same individual.

In the later periods of their existence the movements of the Filariæ become much slower, and the plasma of their bodies more and more granular until eventually all signs of activity disappear, and they are seen stretched or slightly curved in the field of the microscope, having lost the snake rather than worm-like appearance, which, from their tenuity and incessant coiling or wriggling movements, they had presented during life (Fig. II).

If a little spirit, or other preservative agent, such as corrosive sublimate or carbolic acid and glycerine be not added, their outline among the blood corpuscles will become indistinct, and they will degenerate into mere shrivelled strings of a granular appearance, no longer recognisable as Filariæ.

Variety of appearances presented by them after death.

Some of the various aspects presented by them after death are delineated in the second wood-cut. In No. 1 (Fig. II) the Hæmatozoon presents a granular appearance throughout its entire length; but in No. 2, a hyaline membrane is seen to extend beyond the head extremity, and in No. 3 this transparent membrane appears as if it were a continuation of the tail; whereas in No. 4 it extends beyond them both. In No. 5 the membrane appears as if slightly wider at the 'tail' end, but is absent at the opposite extremity, and in No. 6 the membrane is bent in the form of a hook. In No. 7 it is seen puckered, on account of the addition of a thick fluid. The meaning of all the different appearances presented by these Filariæ, obtained from the same patient, will become evident on perusal of a succeeding paragraph.

The results of exposing them to the action of Osmic acid.

One of the Hæmatozoa in this wood-cut (No. 8) is seen to have preserved the appearance presented during life; it having been instantaneously killed by holding the slide over the fumes of osmic acid—by far the best method I know for preserving the specimens. The blood should be quickly but evenly spread over the covering glass, forming as thin a layer as possible; the cover is then to be quickly inverted (before coagulation sets in) over the mouth of a phial containing a 2 per cent. aqueous solution of this chemical. When the preparation has turned somewhat brown, remove it and place it on a slide, previously charged with a drop of a saturated solution of acetate of potash or soda, when it is ready for mounting and will keep, I believe, for an indefinite period.

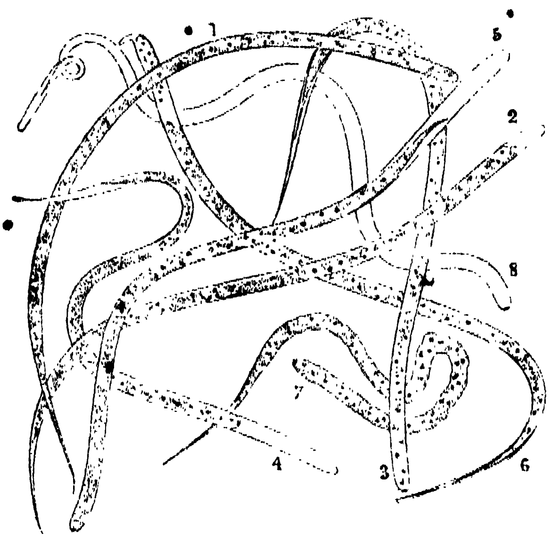


Fig. II × 300

HÆMATOZOA AS IN FIG. I, AFTER THE ADDITION OF PRESERVATIVE MEDIA.

Nos. 1 to 6.	Preserved in weak spirit. (When the Filariæ are observed in slightly decomposed urine they present the appearances here shown also.)
No. 7.	Puckered condition produced by the first addition of pure glycerine.
„ 8.	Killed by exposure to the fumes of Osmic acid.

The minute anatomy of the Hæmatozoon as observed under a ¼″ or $\frac{1}{12}$″ immersion objective.

To account for the various appearances presented by these Hæmatozoa before and after death, which have been just described and figured, may possibly puzzle others as it certainly puzzled me for over two years, although I was constantly in the habit of examining specimens; but, until their existence in the blood had been discovered, by far the greater number of them had been dead, or nearly so, before they came under observation. Having observed that the appearance usually presented by the Hæmatozoa, when recently withdrawn from the circulation, differed considerably from what was observed after or shortly before death, it was determined to watch these changes from beginning to end, and to note them as they occurred. With this object in view, a specimen which appeared to be well developed, was selected out of several found on a quite recently prepared slide, a carefully corrected immersion $\frac{1}{8}$″ object-glass was employed, and the examination continued for eight consecutive hours.

The existence of transverse striæ demonstrated.

At first the movements of the Hæmatozoon were so rapid that little could be detected in addition to what had been quite as distinctly seen with ¼″ glass, except that in certain positions assumed by the worm, and in certain lights, extremely fine transverse striæ were observed quite distinctly. The existence of these striæ had, on several occasions, been more than suspected under the lower power (¼″), but they could not be satisfactorily demonstrated. No attempt has been made to represent those fine markings in the wood-cuts as seen by such a, comparatively, low power as this, for it would only tend to mislead; to cut lines in wood only $\frac{1}{25000}$ of an inch apart (which is about the distance between the markings), when simply magnified 300 diameters, would be impossible, and even in the engraving which represents the object as magnified by twice this power, the distinctness of these markings is considerably exaggerated (Fig III).

The whip-like anterior and posterior prolongations;

As the movements of the Filaria became a little slower, it was seen that the striæ were not on its outer coat, but confined to the body of the worm, and that the tail, which almost always under the ¼″ objective looked like a lash, was not so in reality, but that, every now and then, it could be seen flapping against the corpuscles like a fin—sometimes vertically, sometimes horizontally, and then becoming folded upon itself like a ribbon (Fig. III. 1), a condition which I had already observed and figured two-and-a-half years ago without knowing what it was. Precisely similar phenomena were observed to occur at the opposite terminal extremity (Fig. III. 2).

The explanation of the appearances presented by the filaments.

It was, however, only after the lapse of fully five hours' careful watching, the activity of the Hæmatozoon having considerably subsided, that the real nature of what appeared to be the rapid protrusion and retraction of the delicate membrane at the oral and caudal terminations, was discovered. An unusually long tail was seen to be trailing after the 'body' of the Filaria for several seconds, and whilst thus being dragged, fortunately, it remained exactly in focus, when suddenly the ribbon-like-folds were straightened by the darting of the pointed extremity of the worm into the very tip of this hyaline filament (Fig. III, 2). Scarcely had this taken place than the tail was again retracted and the ribbon-like appendage became evident once more; whereupon the ribbon-like filament at the other extremity was suddenly straightened in a similar manner and the 'head' rapidly projected into the very tip.

The Hæmatozoon may, therefore, be said to be *enveloped in an extremely delicate tube, closed at both ends*, within which it is capable of elongating or shortening itself. This tube, like the sarcolemma of muscular fibres, is without any visible structure, is perfectly transparent, and, but for the difference between it and the fluid in which it is immersed in its power of refracting light, which allows of its margins or folds being brought into view, it could not be demonstrated.

Probability of the blood being the 'home' of the Filaria in the present stage of its development.

The fact of its being thus enclosed seems to show that in the present stage of its existence, the 'home' of this Fliaria is in the blood; it has no visible means of perforating the tissues; moreover, although constantly observed to be in a state of great activity, it does not seem to manifest any special tendency to migration, and is apparently dependent on the current of the blood for its transference from place to place; its movements, therefore, within this enveloping tube, appear to be as limited as those of any other animal enclosed within a sac.

Further anatomical details suggestive of the existence of an oral aperture, and of the development of a digestive canal.

As has been already stated a short chain of aggregated molecules, probably representing the rudiments of an intestinal canal, is frequently seen towards the centre (Fig. III, 1), but the rest of the entire length is at first uninterruptedly clear, although not transparent. But during the time the details described in the preceding paragraphs were observed, and they became more and more evident as the activity of the Hæmatozoon diminished, the appearance throughout became granular or rather molecular. A bright spot also became very evident at the terminal point of the anterior portion, which, as already remarked, is extremely suggestive of an oral aperture, and immediately below this a somewhat elongated vacuole. From this downwards, until about the junction of the middle with the lower third, or perhaps a little nearer the middle, a more or less clearly differentiated œsophagus (?) became likewise discernible, and appeared to have a cœcal termination, but beyond this, until the caudal extremity was reached, the continuation of the digestive tract was less clearly defined (Fig. III, 3).

It then became too dark to continue the observation, and by the next morning the Filaria had become uniformly molecular, all appearances suggestive of internal organs having vanished, although it still continued to coil itself languidly amongst the blood corpuscles.

Such is the minute anatomy of the Hæmatozoon as far as I have been able to make it out. What has here been recorded has now been repeatedly observed, and may be observed by any one possessing a good $\frac{1}{8}''$ or $\frac{1}{12}''$ immersion lens and a microscope provided with good arrangements for illumination. The simple detection, however, of the Hæmatozoa, when present in the blood, is simply a question of patience, and not dependent on any special perfection in the magnifying powers employed.

Measurements.

The average diameter of the Hæmatozoon, as usually found, is, as already stated, about that of a red-blood corpuscle, and its average length about 46 times that of its greatest width; that is to say, its greatest transverse diameter is about $\frac{1}{3500}$ of an inch and its length about $\frac{1}{75}$th of an inch. These are about the measurements most frequently met with, but I have occasionally seen specimens not more than half this size. The largest specimen which I have measured was found to be slightly over $\frac{1}{3000}$th of an inch in width and about $\frac{1}{65}$th of an inch in length, whereas the smallest was only $\frac{1}{7000}$th of an inch in width and

$\frac{1}{125}$th of an inch in length: the relative proportion between the length and the greatest width being as 1 to 45 in the largest and 1 to 56 in the smallest; the width therefore gaining somewhat in proportion to the length as the total dimensions increase.

From what has been above stated concerning the power of extension and contraction possessed by the Hæmatozoon, it will be perceived that these measurements are subject to variations during life; and, as death may occur when the Filaria may happen to be in either of these conditions, the relative proportion between the length and the breadth may then also be found to vary somewhat.

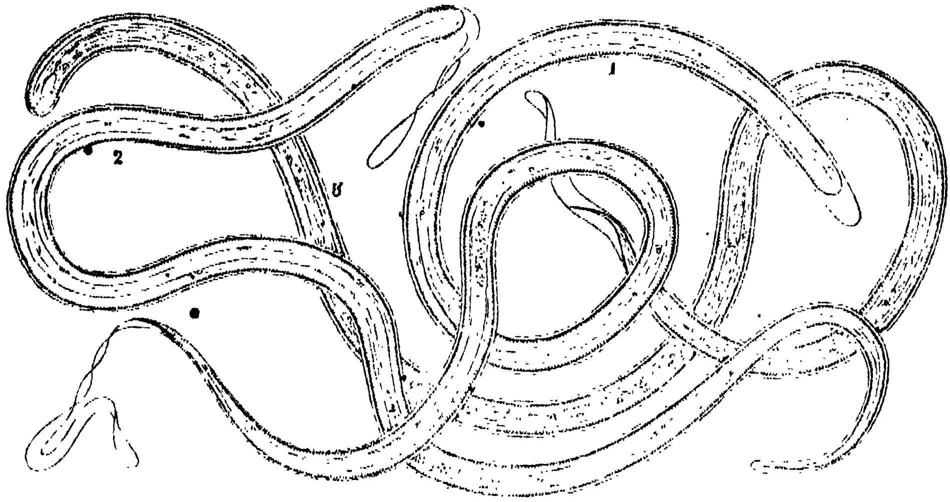


FIG. III. × 600.

VARIOUS APPEARANCES PRESENTED BY A SINGLE HÆMATOZOON, AS OBSERVED UNDER A $\frac{1}{8}$" IMMERSION OBJECT GLASS.

Comparisons instituted between the Hæmatozoon, the Trichina spiralis and the Guinea-worm.

In order to prevent misconception, it may perhaps be well to compare these measurements with those of two well-known Nematode helminths which are occasionally found in the tissues of the human body, *viz.*, the Muscle-trichina and the Guinea-worm, or rather its contained embryos. Both of these parasites present a certain degree of likeness to the Filaria described in this paper. The first named is found in the muscular tissue; the second in the cellular tissue; and the third in the blood. All three present transverse markings, more or less evident—in the Guinea-worm embryo they are particularly distinct; but beyond this feature the similarity between them appears to cease.

They differ from each other in size, in form, and in the relative proportions of length to breadth—setting aside altogether the great difference which exists between their minute internal organisation.

Differences of size and of the relative proportion of breadth to length:

As to size and form the Hæmatozoon approximates more closely to the Filaria medinensis or Gunica-worm embryo, than to the larval stage of the Trichina spiralis, though much smaller than either, especially in breadth. The average length of samples of the former which I possess is $\frac{1}{22}$nd of an inch, and the breadth $\frac{1}{1000}$", so that the breadth to the length is as 1 to 31: whereas the specimens of Trichina with which these comparisons were made averaged $\frac{1}{25}$th of an inch in length and $\frac{1}{700}$th in width; so that they are only 28 times the length of their greatest transverse diameter. It will be remembered that these proportions in the case of the Hæmatozoon have been referred to as being on the average 1 to 46.

Different aspects presented by the anterior and posterior terminations of all three.

A still greater dissimilarity between these helminths than the disparity in size and relative proportions, is the totally different aspect presented by their anterior and posterior extremities; this is sufficiently evident without referring to the minute structural anatomy of the parts. The cephalic end of the Trichina is almost pointed and its caudal termination blunt; whereas, although the anterior extremity of the two Filariæ agrees in the matter of being somewhat rounded and the posterior end in both comes to a very fine point, nevertheless, the relative proportion between the tail of the one and that of the other is sufficiently great to present a marked difference—the tail of the Dracunculus being nearly $\frac{1}{3}$rd, whereas that of the Hæmatozoon is not, at the utmost, more than $\frac{1}{8}$th of the entire length. Of course this is exclusive of the hyaline tube within which the latter is enclosed. Possibly when live young Dracunculi shall have been as carefully examined and described as the lifeless specimens have been by Mr. Busk and Dr. Bastian, the similarity between the Filariæ will become more evident.*

The comparisons just instituted between the three helminths referred to will, perhaps, be more clearly understood by throwing these details into a tabulated form† :—

	Average breadth.	Average length.	Relative proportion of Breadth to Length.	ASPECT PRESENTED BY		Relative length of Tail to Total length.
				Head.	Tail.	
Trichina (of muscle) ...	$\frac{1}{700}$"	$\frac{1}{25}$"	1 to 28	Pointed	Blunt ...	......
Dracunculus (embryo) ...	$\frac{1}{1000}$"	$\frac{1}{32}$"	1 to 31	Rounded	Acutely pointed	1 to 3¼
Human Hæmatozoon ...	$\frac{1}{3500}$"	$\frac{1}{75}$"	1 to 46	„	„ „	1 to 8

The part which the Hæmatozoon appears to take in the production of disease will become still more evident when the condition of the kidneys and suprarenal capsules, referred to in a previous paragraph as having been obtained from a patient who died of Chyluria, has been described.

Tallowy appearance presented by some of the pyramids of the kidney.

To the naked eye none of these organs presented any marked deviation from the normal standard, except that the kidneys were more than usually lobulated, and, that on section several of the pyramids, especially near their apices, presented a smooth, tallowy appearance, suggestive of amyloid disease. No approach to the characteristic iodine re-action could, however, be obtained; but when longitudinal sections were subjected to microscopic examination, numerous translucent oil-like tubules of a somewhat varicose appearance could be observed running alongside the uriniferous tubes as if the lymphatics or minute blood vessels of the part had become plugged. These sections when placed in boiling ether, and afterwards subjected to prolonged maceration in it, did not appear to be materially affected by the process—the translucent oil-like tubules being quite as evident as before.

The kidneys and supra-renal capsules contained numerous Hæmatozoan.

No other morbid changes could be detected as having taken place in either the tubular or cortical tissue of the kidneys, but in every fragment, no matter from what part of the kidneys removed, numerous microscopic Filariæ were invariably obtained, if the tissue had been properly teased, precisely analogous to those which had been detected in the blood, and in the urine during life. Teased fragments of the supra-renal capsules yielded similar specimens. On slitting open any portion of the renal artery, from its entrance into the kidney as far inwards as I was able to follow its ramifications, and gently scraping its inner surface with a scalpel, numerous Hæmatozoa could always be obtained. The renal vein when similarly examined also yielded specimens of the Filariæ, but they did not seem to be so numerous in it.

The vessels themselves did not appear to be diseased, and such of the branches as could be seen with the naked eye did not strike me as being abnormally large. But whether the microscopic ramifications and the capillaries were distended or otherwise (in the absence of properly injected preparations of the organs) could not well be ascertained.

---

* Since this paragraph was in type, I have, however, had ample opportunity of satisfying myself on this matter by the examination of numerous young Dracunculi in all stages of development obtained from a patient admitted into the General Hospital under the care of Dr. Coull Mackenzie, suffering from guinea-worm, but I find that there is even less resemblance between the Filariæ during life than was suggested by lifeless specimens.

† The measurements here introduced of the young Trichinæ and Dracunculi do not materially differ from those generally given. For the sake of uniformity, however, it was considered advisable to measure all three with the same micrometer scale.

Having traced the course of the Hæmatozoon from the blood through its channel into the urine, the peculiar appearances presented by this secretion will now be very briefly considered.

The general appearance presented by chylous urine.

The chemical constitution of chylous or milky-urine is so well known that it is not necessary to do more than refer to the principal features which it presents. It is, as the term applied to it conveys, more or less perfectly white, has a faint odour of milk, which is heightened by warmth; and, like that secretion may be passed through several layers of filtering paper without materially modifying its colour. Usually it is of low specific gravity—from 1006 to 1018—and manifests a slightly acid re-action to test paper. As a rule, the more it approaches the appearance of milk, the more readily and firmly does coagulation take place. When the presence of blood is a prominent feature in it, curdling takes place still more perfectly, but the early addition of solutions of ammonia, sulphate of soda, or nitrate of potash retards, if it does not completely prevent this change; frequently, however, the process has already commenced before the escape of the fluid from the bladder.

Its chemical constituents;

The elaborate analyses which have from time to time been made of the urine in this condition, as well as such simple analyses as I have been able to conduct, have not tended to show that there is any organic or inorganic substance in the secretion, but what already exists in the nutritive fluids of the body, or that any new *chemical* combination has been called into existence. With regard to the alleged presence of sugar in this kind of urine, my attempts to detect it have been entirely negative.

In what way it differs chemically from healthy urine.

In short the urine appears merely to deviate from the healthy standard in so far that it contains an abnormal amount of fatty and fibro-albuminous material, with, perhaps, a diminution in the per-centage of urea; in connection with this, however, I may add that in the cases noted which presented a low specific gravity (1006—1010) the quantity voided had been considerable, from 60 to 70 ounces in the course of the 24 hours.

On no occasion have I been able to detect 'casts' of renal tubules in urine of this nature, even in cases where previous attacks of the malady had occurred.

Microscopic examination of chylous urine;

When subjected to microscopic examination, this kind of urine presents a finely molecular appearance; when recent, however, scarcely any distinct oil-globules, such as are constantly observed in milk, are present; but when acetic acid is added, followed by a little warm ether, this 'molecular base' becomes replaced by large globules of fat, which may be seen to form whilst the re-agents are being applied. In the meshes of the coagulated substance numerous granular cells are seen, apparently identical with those of chyle, lymph, or the white cells of the blood; and, generally, a sprinkling, more or less marked, of red-blood corpuscles.

The detection of the Filariæ sometimes very difficult;

Besides these, if the shred of coagulum on the slide has been properly 'teased,' the Filariæ, described in the preceding pages, will also be usually found. As before stated, in not a single case which has come under my notice have they been absent. However, they *may* not be present in *every* sample of Chylous urine examined, or rather I should say, the numbers present may be so few as to elude detection.

Dimensions of the Filariæ found in it.

With regard to the size of the Filariæ which are met with in the urine, it may be observed that they present the same measurements as those met with in the blood; some of the largest as well as some of the smallest examples have been found in this secretion.

A case illustrative of the difficulty sometimes experienced in detecting Filariæ in the urine.

The importance of bearing in mind the difficulty that is sometimes experienced in discovering the Filaria in the urine also, may possibly be more strongly impressed by the narration of an illustrative case, which will, moreover, serve to draw attention to other important matters bearing on the question of infection with Hæmatozoa:—

A European, age 38, formerly in the army, was kindly sent to me by Dr. McConnell, with a note stating that the man was amongst his out-patients and had been suffering, and was even suffering a little still, from Chyluria. The medical history which I gathered from the man was briefly told as follows: Has suffered more or less constantly for five years from what he believes to be 'chronic dysentery.' This came on during his residence in Mysore. Eight months after the advent of the intestinal affection he observed that the urine passed towards the middle of the day was white, but was not so in the early morning. His hearing and sight became affected about the same time, and have remained imperfect since, although there is nothing to be observed wrong about either set of organs.

Mode of preserving Chylous urine for subsequent microscopic examination.

The urine at the time he paid me a visit did not seem to be particularly affected, merely a little cloudy, but was albuminous. A little carbolic acid solution having been added to it, it was set aside in a conical vessel, and subsequently the sediment removed by means of a pipette for microscopic examination. This is usually the method adopted by me in cases when the fluid does not coagulate, or when, after coagulation has taken place, it has become liquified.

Eventual result of numerous examinations.

Slide after slide was examined in vain, still I felt so convinced that, as there had been a distinct history of Chyluria, and as the urine was still albuminous, but contained no 'casts,' the original cause had not entirely disappeared. Eventually after searching for about four hours, three excellent specimens of the Filariæ were obtained, one of which I forthwith despatched to Dr. McConnell. A week afterwards the patient returned, but I failed to detect a single worm in the specimen of urine which was obtained on this occasion. He came a third time, after an interval of about another week, when Filariæ were detected in the sediment without much delay.

Several preparations of the blood were also examined, but the Hæmatozoa were not detected in this fluid. Were, however, a couple of *ounces* of the blood examined (coagulation being prevented by the addition of a neutral salt), instead of a couple of drops, doubtless the sediment would contain plenty of the Filariæ, seeing that a few must have actually passed out of it through the kidneys, as we have already seen that they are not localised in these organs, the latter simply acting as one of the channels through which they may escape out of the circulation.

The salient features of Chyluria:—

The phenomena associated with chyluria are so well known that it is not deemed necessary to give more than the salient features of the malady, more especially such, as are exemplified in the cases referred to in this paper; which, in the main, correspond very closely with the cases that have been from time to time recorded by others.

Originates in certain countries;

In the first place it is to be noted that the malady is decidedly *localised* as to its origin. As far as I have been able to ascertain, the only cases on record have occurred in persons who have at some period of their lives inhabited the East or West Indies, some parts of Africa, Bermuda, Brazil or the Mauritius; so that all writers agree, no matter to what particular cause the disease has been referred, that it is intimately related to a tropical climate. Simple removal, however, from such climate has not sufficed to prevent a recurrence of the disease in England or in other parts of Europe.

Suddenness of attack;

Secondly, it is noticeable, that the disease, as manifested by the milky appearance of the urine, comes on very *suddenly*, not only on the first, but on succeeding occasions also; this peculiarity to my mind, points to a local cause in the system, rather than to a generally distributed functional disorder.

No signs of organic kidney-disease;

Thirdly, there is a complete absence of casts of the tubules of the kidney in the urine, notwithstanding the large amount of albuminoid elements present.

Concomitant maladies.

And, fourthly, it is frequently associated with more or less distinctly marked symptoms of various other obscure diseases, such as partial deafness; diarrhœa, often very persistent; chronic conjunctivitis or some more deeply-seated defect in the visual organs; and sometimes temporary swellings of the face or extremities.

The probable cause and pathology of Chyluria, &c.

These varied complications may, I believe, be very satisfactorily accounted for now that it has been ascertained that the nutritive channels of the tissues, even to their most minute ramifications, are inhabited by numberless, living Hæmatozoa, which, accidentally or otherwise accumulating in any particular set of these channels, may lead to local stoppages in the flow of the nutritive fluids and to rupture of the extremely delicate walls of the capillaries, lacteals or lymphatics. The extreme activity of the Filariæ, especially should a bundle of them accumulate in one particular spot, would doubtless materially aid in giving rise to rupture—for, as is well known, the walls of these channels are extremely delicate, those of the lymphatic system being especially so. The resulting phenomena, such as the escape of the nutritive fluid and of the Filariæ contained within the ruptured channel into the excretory ducts belonging to the part, appears to me to be so simple a procedure that to dilate on its mechanism would be quite superfluous. When the fissure becomes plugged or healed these unusual symptoms naturally disappear.

It would seem, therefore, that the milky appearance of the urine is merely one of the symptoms of the existence of this Filaria in the nutritive channels of the body.

Possible other causes of Chyluria.

It must not, however, be inferred that I would refer *all* cases of Chyluria to this cause. Doubtless a combination of various other circumstances might produce similar phenomena, just as various obstructing causes, such as the pressure of tumours, diseased condition of the vessels, &c., may produce the exudation of milky fluid on various parts of the body—from the abdominal walls, the groin, the axilla, the thigh and other parts, such as are constantly being reported in medical journals. Nevertheless, cases occurring in warm countries, or in persons who had formerly resided in them, appear to indicate that the disease is not dependent on such mechanical or pathological causes as these.

Cause of various conditions which may or may not be associated with Chyluria:—

The same remarks apply to the etiology of the various other phenomena enumerated as the more or less frequent concomitants of Chyluria, without much modification—for even should actual rupture not take place, local congestions may be induced or very trifling fissures, which might yet be sufficient to interfere with the functions of delicate organs, or it may be, as in the case of the eye or ear, that the mischief may be chiefly due to some changes induced in the refractive media of the former, or in the fluid in contact with the nerve filaments in the latter.

The intestinal affection, &c.;

The intestinal affection, if in reality connected with the entrance or exit of these Filariæ, deserves special attention. The only *known* symptom from which the man in whose blood this helminth was first discovered, was severe diarrhœa; the commencement of the illness of another man is dated from a similar attack, which developed itself into what is described as "chronic dysentery," on which the usual medicines appear to have had no influence, for during the last five years the disease came and went without reference to medical treatment—the chylous condition of the urine having been equally irregular in its appearance and disappearance. It will be remembered that the intestinal affection commenced eight months before the urinary symptoms appeared; moreover in the woman whose autopsy has been recorded on a previous page, 'tubercular-like' ulcers were found in the intestines, as also in the lungs. All these occurrences, especially when taken in connection with what is *known* to occur in connection with the migration of several parasites, are too prominently associated with the history of the cases in which these Hæmatozoa were detected to permit of the subject being passed over without comment.

Some forms of 'granular-lids';

With reference to the 'granular-lid' condition of one of the patients affected with Hæmatozoa, it has been demonstrated since the earlier pages of this paper was in type, that, not only had congestion resulted from the presence of the Filariæ, but actual rupture and escape of one of them at least occurred, either through the channel of the lachrymal or of a Meibomian gland.

The recurring attacks of Chyluria.

Although feeling convinced that Chyluria and other morbid phenomena are induced by the presence of these microscopic Filariæ in the circulation, still, unless it can be shown that they may have a prolonged existence in this condition, it will be difficult to reconcile this opinion with the fact that the malady so frequently recurs in the same individual. It seems unlikely that the same person should become re-infected with Hæmatozoa several times, and especially that re-infection should occur after years of residence in England where probably this particular Filaria is not indigenous.

Hæmatozoa in lower animals—in dogs, &c.

Not having been able to watch the progress of isolated cases for a sufficiently long period to judge whether or not all the Hæmatozoa in the system escape during a single attack of Chyluria (the period of their existence in the stage in which they are found in the blood having expired), nor having succeeded in prolonging their existence by artificial cultivation, in serum, moist sand or saliva, beyond a period of three days, it will be necessary for me to refer briefly to a few of the recorded instances of Hæmatozoa occurring in lower animals, so as to fill up the gap in the chain of evidence as far as possible.

Foremost among the recorded particulars concerning Hæmatozoa are those of MM. Grube and Delafond, which were presented in their 'Mémoire' to the French Academy of Science.* These gentlemen, during a period of nine years, made observations on 29 dogs in whose blood on an average 55,000 microscopic worms were estimated to exist. The diameter of these was somewhat less than that of a red-blood corpuscle; the length, however, is not given in this communication, but I find this referred to in one of the early volumes of the 'Lancet' (1843) as being about $\frac{1}{100}$th of an inch—which is somewhat smaller than the human Hæmatozoon. These dogs were under observation for periods varying from several months to five years, during which the state of the blood remained unchanged. *Post-mortem* examinations appear to have been conducted with great care at all seasons of the year, but on *one* occasion only were what the authors deemed to be the 'parent-worms' discovered. Six of these were found to be lodged in a large recently-formed clot in the right ventricle—four being females and two males. The size of these was by no means microscopic, being from 5 to 7 inches in length (14 to 20 centimètres)†, and from $\frac{1}{25}$th to $\frac{1}{16}$th of an inch transversely. Schneider questions whether these were the parent-worms of the microscopic Filariæ;‡ others state that they had simply found their way to the heart from the intestines by accident, because this observation of MM. Grube and Delafond, although published about twenty years, has never been confirmed. Leuckart, who, however, expresses no opinion on this particular subject, refers to these observations as an illustration of the fact that, with the exception of the Trichina spiralis, not a single nematode has been observed to infect its own 'bearer'—the Hæmatozoa of dogs as well as of frogs never having been observed to develop into mature helminths as long as they remained in the blood.§

In a highly interesting paper read by Dr. Cobbold before the Linnean Society in 1867,‖ it is more than hinted at that the Hæmatozoa referred to by MM. Grube and Delafond were the brood of 'Spiroptera sanguinolenta' so commonly found in the heart of dogs in China, but nothing is mentioned concerning the microscopic examination of the blood of these animals. In a footnote it is stated that Dr. Lamprey had forwarded specimens to the Netley Museum. Should these be still in a good state of preservation, it would be a great matter if Professor Aitken would re-examine the specimens, especially as to the minute structure of the contained embryos, if there be any, and publish the result.

---

* 'Mémoire sur le ver filaire qui vit dans le sang du chien domestique' *Comptes Rendus*, T. XXXIV, p. 9.

† Not as erroneously stated in some English Works on Helminthology 'from one-half to three-fourths of an inch.'

‡ 'Monographie der nematoden,' 1866, p. 88.

§ 'Menschlichen Parasiten', Vol. II, Part 1, p. 102.

‖ Journal of Linn. Soc.—Zoology,' Vol. IX.

Dogs in Bengal not affected with Hæmatozoa.

As regards the blood and heart of dogs in India, out of nearly 200 dogs examined by Dr. D. D. Cunningham and myself in connection with various experiments, in no instance were any such helminths detected, so that the canine Filariæ of France and China would appear not to be found in Bengal.

Dr. G. E. Dobson has drawn my attention to a description of mature Filariæ found by M. Joly in the heart of a seal; the female worm is stated to have been stuffed throughout its entire length with ova and embryos; the latter measured $\frac{1}{40}$th to $\frac{1}{36}$th of an inch in length and $\frac{1}{2500}$th in breadth, but the author does not consider that they could circulate with the blood through the capillary vessels.*

Such in a few words is the present state of our knowledge of the principal Hæmatozoa affecting lower animals; and from these records alone would our inferences have had to be made in regard to the particular question as to the possible duration of the Human Hæmatozoon were it not for a rather strange coincidence.

The Filariæ detected in the blood of a man in whose urine they existed more than 2½ years previously.

The foregoing account had just been transcribed from my notes, when I had occasion to visit the Government Printing Establishment, where, to my utter surprise, I saw, busily putting into type a portion of the foregoing pages, the very man in whose urine these Filariæ were first detected—more than two and half years ago! Being rather below the average in intelligence, he had not the remotest idea to what the manuscript referred.

At my request he called upon me in the afternoon, and I learnt from him then, that his urine had been perfectly healthy ever since he left the hospital, about April 1870,—it certainly looks healthy now and is quite free from albumen†. I prepared seven slides from blood obtained by pricking the middle finger of one hand, and three slides from the same finger of the other hand. On seeing me do this, the man enquired why I had made so many preparations, as on a former occasion I had only taken *one* slide; a circumstance, by the way, which I had quite forgotten; certainly I had not discovered Hæmatozoa. This little incident also conveys its lesson; had I taken a dozen slides on the first occasion instead of one, the date of the detection of the Filaria in the blood would probably have been simultaneous with their detection in the urine. In the first four or five preparations examined nothing could be observed; in the two next taken up, one belonging to each hand, Hæmatozoa were detected, very active, but in no way differing from the excellent live specimens which I had obtained in his urine long ago, and in no way differing from the Filariæ since detected in the urine and blood of so many persons. The measurements of two specimens were taken on the following morning after their activity had subsided; one was $\frac{1}{76}$th of an inch in length by $\frac{1}{3500}''$th in breadth, and the other $\frac{1}{80}''$th by $\frac{1}{3500}''$th.

The prolonged existence of Hæmatozoa sufficient to account for recurrency of the malady.

Here is, therefore, definite information more satisfactory than that to be obtained by instituting comparisons between the Hæmatozoa of man and of animals, that, not only may those found in man *live for a period of more than 2½ years, for certain,* but that there is no evidence that they have any tendency to develop beyond a certain stage so long as they remain in the circulation. For aught we know to the contrary, these Filariæ may live for many years, and thus, at any moment, no matter how long after a previous attack, nor in what country the person may reside, he may be surprised by the sudden accession of Chyluria or any other obscure disease, such as will readily be understood by the physician when he becomes aware of the state of the blood.

---

* Ann. Mag. Nat. Hist., 1858, p. 400.

† On referring to my notes of this case I find that, at the time when he left the Hospital, the albumen had disappeared from his urine and that Filariæ could no longer be detected in it.

If after the first brood of young Filariæ, there be no provision for other broods to follow, then every attack would be a step towards permanent recovery, but of this I know nothing at present, although some of the cases recorded appear to warrant such an inference. Nor have I any definite knowledge as to how the blood originally becomes infected; to hint that it is possible if not probable that the Filaria may eventually be traced to the tank—either to its water or its fish, is the utmost that can be done.

Many other interesting questions suggest themselves as matters for future enquiry; such for example as to whether the fœtus *in utero* is infected by the mother's blood: cases have been recorded which seem to favour such a supposition; such instances, however, may have been due to the particular localities in which the persons resided—parents and children having for generations been subject alike to the same influences. On one occasion, I attempted to solve this question, but the mother, who herself was very averse to having her finger pricked, peremptorily refused to submit the child to a similar trivial operation.

A summary of the principal facts and inferences recorded.

This paper having considerably exceeded the limits originally intended, it may be that the leading facts referred to have become obscured by the digressions that have been necessarily made, so that, before concluding, a short summary of the observations and of the inferences which have been deduced therefrom may be advantageous :—

(1.) The blood of persons who have lived in a tropical country is occasionally invaded by living microscopic Filariæ, hitherto not identified with any known species, which may continue in the system for months or years without any marked evil consequences being observed; but which may on the contrary give rise to serious disease and ultimately be the cause of death :

(2.) The phenomena which may be induced by the blood being thus affected are probably due to the mechanical interruption offered (by the accidental aggregation perhaps of the Hæmatozoa) to the flow of the nutritive fluids of the body in various channels, giving rise to the obstruction of the current within them or to rupture of their extremely delicate walls, and thus causing the contents of the lacteals, lymphatics or capillaries, to escape into the most convenient excretory channel. Such escaped fluid, as has been demonstrated in the case of the urinary and lachrymal or Meibomian secretion, may be the means of carrying some of the Filariæ with it out of the circulation. These occurrences are liable to return after long intervals—so long in fact as the Filariæ continue to dwell in the blood :

(3). As a rule, a Chylous condition of the urine is only one of the *symptoms* of this state of the circulation, although it appears to be the most characteristic symptom which we are at present aware of :

(4). And, lastly, it appears probable that some of the hitherto inexplicable phenomena by which certain tropical diseases are characterised, may eventually be traced to the same, or to an allied condition.

The importance of a careful microscopical examination of the blood of persons suffering from obscure diseases, in tropical countries especially, is therefore more than ever evident, and opens up a new and most important field of enquiry—referring as it does to a hitherto unknown diseased condition.

Calcutta, October 1872.

ANNUAL RETURNS

OF THE

EUROPEAN ARMY OF INDIA

AND OF THE

NATIVE ARMY

AND

JAIL POPULATION OF THE BENGAL PRESIDENCY

FOR THE YEAR

1871.

COMPILED AND SYSTEMATICALLY ARRANGED FROM THE ORIGINAL DOCUMENTS BY

JAMES L. BRYDEN, M.D.,

SURGEON, BENGAL MEDICAL SERVICE;

STATISTICAL OFFICER ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA

CONTENTS.

1. EUROPEAN TROOPS.

TABLE.

Sickness and Mortality among the European Troops composing the Army of India during the Year 1871, and the prevalence of the principal Diseases in each Month of the year I

Sickness and Mortality among the Troops composing the Army of the Bengal Presidency ... II

Sickness and Mortality among the Troops composing the Army of the Madras Presidency ... III

Sickness and Mortality among the Troops composing the Army of the Bombay Presidency ... IV

Comparative Statement of the Ratios of Sickness and Mortality in the Armies of the Three Presidencies V

Sickness and Mortality among the Troops serving in Bengal Proper VI

Sickness and Mortality among the Troops serving in the Dinapore, Benares, Oude, and Cawnpore Districts VII

Sickness and Mortality among the Troops serving in the Rohilcund and Meerut Districts ... VIII

Sickness and Mortality among the Troops serving in the Agra District and in Central India ... IX

Sickness and Mortality among the Troops serving in the Punjab X

Sickness and Mortality among the Troops occupying Hill Stations XI

Sickness and Mortality among the Troops occupying the Convalescent Depôts during the Hot Season XII

Sickness and Mortality among the Troops serving in Rajpootana, Malwa, Scinde, and Aden ... XIII

Sickness and Mortality among the Troops serving in the Deccan and in Nagpore XIV

Sickness and Mortality among the Troops serving in Southern India XV

Sickness and Mortality among the Troops serving [illegible] Burmah and Pegu XVI

Sickness and Mortality among the Troops occupying the Hill Stations and Hill Depôts of the Madras and Bombay Presidencies XVII

Comparative Statement of the Ratios of Sickness and Mortality among the Troops serving in the various Provinces of the Bengal Presidency XVIII

Comparative Statement of the Ratios of Sickness and Mortality among the Troops serving in the various Provinces of the Madras and Bombay Presidencies... XIX

General Statistics of Sickness and Mortality in the principal Military Stations of the Three Presidencies, and the Daily Sick-rate of each Month XX

Ratio in which the principal Diseases have contributed to make up the Admission-rate of the Year in the chief Military Stations XXI

Mortality in each Station, the Causes of Death, and the Ratio of Deaths to Strength XXII

Prevalence of Cholera in each Month, and the Distribution of the Disease by Stations and Provinces... XXIII

Prevalence [illegible] Fever in each Month, and the Distribution of Fevers by Stations and Provinces ... XXIV

Prevalence of Enteric Fever in each Month, and the Distribution of the Disease by Stations and Provinces XXV

Prevalence of Apoplexy and Sunstroke in each Month, and the Distribution of these Diseases by Stations and Provinces XXVI

Detail of the Causes of Death in the Armies of the Three Presidencies XXVII

Detail of the Causes of Invaliding in the Armies of the Three Presidencies XXVIII

Gain and Loss in Strength of the Regiments composing the Army of India—
  A.—Gain and Loss of the different Arms.
  B.—Gain and Loss of the Army of each Presidency XXIX

Admissions, Deaths, and Invaliding of each Regiment and Battery of the Army of Bengal for the Year— XXX
  1.—Regiments of Bengal Proper.
  2.—Regiments of Behar, Benares, Oude, and Cawnpore.
  3.—Regiments of Rohilcund and Meerut.
  4.—Regiments of Agra and Central India.
  5.—Regiments of the Punjab.
  6.—Regiments cantoned at Hill Stations.
  7.—Invalid Garrison, and Working Parties in the Hills.
  8.—Convalescent Depôts.

(Annual Relief of the Army of the Three Presidencies, for 1871-72, follows Table XXX)

CONTENTS.

TABLE.

Admissions, Deaths, and Invaliding of each Regiment and Battery of the Armies of Madras and Bombay ... XXXI

1.—Regiments of Rajpootana, Malwa, Scinde, and Aden.
2.—Regiments of the Deccan and Nagpore.
3.—Regiments of Southern India.
4.—Regiments of Burmah and Pegu.

Number of Days spent in Hospital by the Men of each Regiment and Battery in the Three Presidencies XXXII
Distribution of the Army of India on 30th June 1871 ... XXXIII
(An Index to the three preceding Tables).

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS.

Sickness and Mortality among the Women of Regiments composing the Army of India, and the prevalence of the principal Diseases in each Month ... I
Sickness and Mortality among the Children of Regiments composing the Army of India, and the prevalence of the principal Diseases in each Month ... II
Sickness and Mortality among the Women of the Army of Bengal ... III
Sickness and Mortality among the Children of the Army of Bengal ... IV
Sickness and Mortality among the Women of the Army of Madras ... V
Sickness and Mortality among the Children of the Army of Madras ... VI
Sickness and Mortality among the Women of the Army of Bombay ... VII
Sickness and Mortality among the Children of the Army of Bombay ... VIII
Distribution by Stations of the Deaths of the Women of the Army of India ... IX
Distribution by Stations of the Deaths of the Children of the Army of India ... X
Distribution by Stations of the Cholera of the Women of the Army of India ... XI
Distribution by Stations of the Cholera of the Children of the Army of India ... XII
Detail of the Admissions and Deaths of the Women of the Armies of the Three Presidencies ... XIII
Detail of the Admissions and Deaths of the Children of the Armies of the Three Presidencies ... XIV

2. NATIVE TROOPS.

Sickness and Mortality among the Native Troops, of the Regular Army, serving in the Bengal Presidency during the Year, and the prevalence of the principal Diseases in each Month of the year ... I
Sickness and Mortality among the Troops serving in Bengal Proper and in Assam ... II
Sickness and Mortality among the Troops serving in the Dinapore, Benares, Oude, and Cawnpore Districts ... III
Sickness and Mortality among the Troops serving in the Meerut District and in Rohilcund ... IV
Sickness and Mortality among the Troops serving in the Agra District and in Central India ... V
Sickness and Mortality among the Troops serving in the Punjab... ... VI
Sickness and Mortality among the Troops composing the Central India Irregular Force ... VII
Sickness and Mortality among the Troops composing the Punjab Frontier Force ... VIII
Sickness and Mortality among the Troops, Regular and Irregular, serving Trans-Indus ... IX
Comparative Statement of the Ratios of Sickness and Mortality among the Regular Troops serving in the various Provinces ... X
The Daily Sick-rate of each Station in each Month ... XI
Ratio in which the Chief Diseases have contributed to make up the Admission-rate of each Station ... XII
The Mortality in each Station, the Causes of Death, and the Ratio of Deaths to Strength ... XIII
Prevalence of Cholera in each Month, and the Distribution of the Disease by Stations and Provinces... XIV
Prevalence of Fevers in each Month, and the Distribution of Fevers by Stations and Provinces ... XV
Admissions, Deaths, and Invaliding of each Regiment— ... XVI

1.—Regiments of Bengal Proper, Bhootan, and Assam.
2.—Regiments of Behar, Benares, Oude, and Cawnpore.
3.—Regiments of Rohilcund and Meerut.
4.—Regiments of Agra and Central India.
5.—Regiments of the Punjab.
6.—Regiments of the Punjab Frontier Force.
7.—Regiments of the Central India Irregular Force.

(Statement showing the Gain and Loss in Strength of the Regular Army follows Table XVI.)

TABLE.

(Statement showing the Gain and Loss of the Regiments of the Central India Force and Punjab Frontier Force, is appended to Tables VII and VIII.)

(Annual Relief of the Native Army for 1871-72 concludes the series of Tables for the Native Army of the Bengal Presidency.)

Sickness and Mortality among the Troops of the Madras Army occupying Stations in the Bengal Presidency XVII

3. JAIL POPULATION.

Sickness and Mortality among the Jail Population of the Bengal Presidency during the Year, and the prevalence of the principal Diseases in each Month of the year I

Sickness and Mortality among the Jail Population in Lower Bengal and in Assam II

Sickness and Mortality among the Jail Population in Chota Nagpore, and in the Dinapore, Benares, Oude, and Cawnpore Districts III

Sickness and Mortality among the Jail Population in the Central Provinces, excluding Jubbulpore and Saugor IV

Sickness and Mortality among the Jail Population in the Agra District and in Central India ... V

Sickness and Mortality among the Jail Population in the Rohilcund and Meerut Districts ... VI

Sickness and Mortality among the Jail Population in the Punjab VII

Comparative Statement of the Ratios of Sickness and Mortality among the Jail Population in the various Provinces VIII

General Statistics of Sickness and Mortality in each Jail, and the number Daily Sick in each Month... IX

Ratio in which the principal Diseases have contributed to make up the Admission-rate of the Year in each Jail X

Prevalence of Cholera in each Month, and the Distribution of the Disease by Stations and Provinces... XI

The Mortality in each Jail, the Causes of Death, and the Ratio of Deaths to Strength XII

Detail of the Admissions and Deaths of the Jail Population in each Province XIII

GENERAL SUMMARY FOR 1871.

Detail of the Causes of the Admissions and Deaths of the European Army of the Three Presidencies, and of the Native Army and Jail Population of the Bengal Presidency.

(This Table concludes the series for 1871.)

EUROPEAN TROOPS, 1871.

EUROPEAN TROOPS, 1871.

I.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of INDIA during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Deaths out of Hospital.	Suicidal Deaths.
January ...	55,175	2,847	51·6	95	1·72	...	1	...	3	3	11	4	1	2	...	13	...	13	11	9	...	...	. .	2	11	10	1
February ...	56,189	2,977	53·0	63	1·12	...	...	...	2	...	8	2	...	3	...	14	...	4	4	10	..	...	...	...	5	9	2
March ...	55,989	2,995	53·5	64	1·14	2	...	...	2	2	5	1	1	5	...	13	...	3	9	3	...	. .	...	...	6	8	4
April ...	57,920	3,101	53·6	70	1·21	3	...	...	9	3	3	7	1	3	...	10	...	3	5	8	...	. .	...	..	8	3	4
May ...	57,463	3,333	58·0	104	1·81	33	...	...	7	2	4	6	2	7	...	10	.	4	8	8	...	..	1	...	9	2	1
June ...	57,269	3,570	62·3	85	1·49	6	...	...	8	3	7	13	4	6	...	8	...	4	7	10	...	..	1	1	4	3	...
July ...	57,193	3,687	64·5	78	1·36	2	...	...	9	...	14	2	3	11	...	11	...	3	1	7	...		1	1	5	4	4
August ...	57,087	3,786	66·3	100	1·75	2	...	...	9	1	11	7	2	12	1	18	..	...	9	6	...	1	1	...	13	2	5
September ...	56,951	3,703	65·0	82	1·44	2	...	...	12	2	13	2	2	6	1	19	1	...	7	2	...	..	..	1	6	3	3
October ...	56,077	3,458	61·7	87	1·55	...	...	...	6	3	9	2	4	6	1	16	...	3	11	6	...	1	...	1	10	6	2
November ...	57,598	3,162	55·0	89	1·55	11	...	1	7	. .	3	...	2	6	3	15	...	1	9	12	...	..	...	...	8	5	6
December ...	56,818	2,872	50·5	79	1·39	1	...	...	4	1	4	1	...	9	1	8	...	18	12	6	...	...	...	1	4	6	3
						62	1	1	78	20	92	47	22	76	7	155	1	56	93	87	..	2	4	7	89	61	35
						Died per 1,000 of the Average Strength.																					
For the year ...	56,806	3,291	57·9	996	17·53	1·09	·02	1·74			1·62	·83	·39	1·34	·12	2·73	·02	·99	1·63	1·53	..	·03	·07	·12	1·57	1·07	·62

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	3	3	72	6	3	2	4	...	24	2	119	2·1	52·10
Smallpox ...	2	...	...	3	4	...	...	..	1	.	3	2	15	·3	6·67
Fever, Intermittent ...	1,739	1,108	1,143	1,248	1,975	1,795	2,021	2,694	1,962	2,551	1,677	1,198	21,174	372·7	...
„ Remittent ...	55	43	51	115	184	196	189	184	191	227	129	84	1,648	156·3	1·08
„ Continued ..	260	250	400	635	1,170	834	812	1,009	724	600	315	201	7,230		
Enteric Fever ..	35	16	8	12	16	18	16	16	32	15	8	15	207	3·6	43·96
Apoplexy ..	9	4	6	19	12	33	11	13	8	3	3	1	125	2·2	37·60
Delirium Tremens ...	24	16	23	21	19	25	34	43	21	28	20	13	290	5·1	7·59
Dysentery ...	182	137	116	130	204	202	183	293	199	221	181	197	2,245	39·5	3·34
Diarrhœa ...	219	182	220	294	304	311	459	476	317	283	245	256	3,568	62·8	·20
Hepatitis ...	255	246	232	216	299	311	326	359	305	316	254	182	3,300	58·1	4·67
Spleen Disease ...	30	23	21	32	30	41	32	31	41	18	54	22	375	6·6	·27
Respiratory Diseases ...	533	400	444	383	412	289	281	357	258	295	274	386	4,321	76·1	1·30
Phthisis Pulmonalis ...	60	36	36	38	45	39	40	58	17	54	51	47	556	9·7	15·64
Scurvy ..	3	1	2	. .	2	3	...	3	...	1	4	1	20	·3	10·00
Rheumatism ...	347	275	277	285	368	313	323	299	256	337	285	228	3,593	63·2	·51
Venereal Diseases ...	1,178	1,005	1,042	1,051	1,071	778	744	918	696	912	807	947	11,179	196·8	
Eye Diseases ...	85	82	110	142	132	117	111	161	109	109	85	80	1,323	23·3	
Abscess and Ulcer ...	455	389	421	480	614	482	412	547	315	457	361	373	5,306	94·5	
Wounds and Accidents...	483	478	463	445	567	370	355	408	367	471	408	580	5,395	95·0	
All other causes ...	747	704	734	827	1,018	940	1,014	1,245	760	977	720	616	10,302	181·4	
	6,681	5,464	5,761	6,378	8,518	7,103	7,398	9,116	6,646	7,938	5,908	5,434	82,345		
	Admitted per 1,000 of the Average Strength in each Month.														
	121·1	97·2	102·9	110·1	148·3	124·1	129·2	159·7	116·7	141·6	102·6	95·6	1449·6		

EUROPEAN TROOPS, 1871.

II.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of the BENGAL PRESIDENCY during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Deaths out of Hospital.	Suicidal Deaths.
January ...	34,170	1,751	51·2	55	1·61	...	1	...	2	...	3	2	1	...	...	8	...	11	7	5	...	...	...	1	8	5	1
February ..	34,413	1,851	53·8	32	·93	...	...	...	...	...	5	...	...	2	...	6	...	4	1	6	...	...	...	...	3	4	1
March ...	34,690	1,879	54·2	42	1·21	2	...	...	1	2	4	1	...	2	...	8	..	1	6	2	...	...	...	...	4	5	4
April ...	35,787	1,932	54·0	41	1·15	3	...	...	8	3	2	2	...	1	...	3	...	3	3	5	...	...	.	...	4	2	2
May	35,461	2,135	60·2	49	1·38	1	...	..	6	2	3	3	...	4	...	8	...	4	5	6	...	...	1	...	5	1	...
June ...	35,360	2,248	63·6	63	1·78	2	...	...	7	2	6	9	3	4	...	5	...	4	6	8	...	..	1	1	3	2	...
July ...	35,300	2,296	65·0	48	1·36	1	...	...	7	...	10	1	1	5	...	9	...	2	...	6	...	...	1	...	2	2	1
August ..	35,212	2,445	69·4	74	2·10	2	...	..	9	1	9	6	1	8	...	11	...	...	7	4	...	1	1	...	8	1	5
September ...	35,127	2,428	69·1	52	1·48	2	...	...	11	2	8	2	1	2	...	11	1	...	4	2	...	...	...	...	2	2	2
October .	35,017	2,238	63·9	53	1·51	...	...	.	6	1	4	1	2	3	1	12	...	2	5	5	...	...	...	1	6	3	1
November ...	35,538	1,937	54·5	63	1·77	11	...	...	5	...	3	..	...	5	2	11	...	1	7	5	...	...	...	...	5	5	3
December ..	35,383	1,770	50·0	54	1·53	1	...	..	4	...	3	1	...	5	1	4	...	16	7	4	..	...	...	1	2	5	...
						25	1	...	66	13	60	28	9	41	4	96	1	48	58	58	...	1	4	4	52	37	20
						Died per 1,000 of the Average Strength.																					
For the year ...	35,122	2,080	59·2	626	17·83	·71	·03	2·25			1·71	·80	·25	1·17	·12	2·73	·03	1·37	1·65	1·65	.	·03	·12	·12	1·47	1·05	·57

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	3	3	1	3	2	2	2	...	23	2	41	1·2	61·00
Smallpox ...	2	...	...	3	4	...	...	...	...	...	1	2	12	·3	8·33
Fever, Intermittent ..	1,261	809	752	878	1,401	1,151	1,304	1,867	1,340	1,853	1,213	830	14,658	417·3	...
„ Remittent ...	21	23	38	84	113	104	137	160	168	190	104	60	1,202	178·2	1·28
„ Continued ...	137	166	225	446	825	623	515	768	558	368	149	102	4,882		
Enteric Fever ...	17	13	6	8	12	14	10	14	17	8	8	7	134	3·8	44·78
Apoplexy ..	3	...	3	7	2	20	7	11	5	2	3	1	64	1·8	43·75
Delirium Tremens ...	9	6	9	11	11	13	19	17	11	11	6	6	129	3·7	6·98
Dysentery ...	89	67	61	84	130	109	83	146	108	115	102	108	1,202	34·2	3·41
Diarrhœa ...	135	117	142	210	192	187	318	276	199	165	166	164	2,271	64·7	·18
Hepatitis ...	121	163	136	146	201	218	220	245	198	199	143	107	2,097	59·7	4·58
Spleen Disease ...	24	19	19	24	25	30	27	15	28	39	17	14	281	8·0	·36
Respiratory Diseases ...	393	286	284	255	305	184	196	241	172	207	184	277	2,984	85·0	1·61
Phthisis Pulmonalis ...	30	21	18	24	21	23	22	35	30	32	40	22	318	9·0	17·92
Scurvy ...	1	...	1	...	1	3	...	2	...	1	2	1	12	·3	8·33
Rheumatism ...	235	200	198	187	255	207	188	178	156	218	184	171	2,377	67·7	·52
Venereal Diseases ..	817	677	720	673	700	495	465	570	453	611	504	648	7,333	208·8	
Eye Diseases ...	54	48	74	87	78	83	68	110	57	74	48	61	842	24·0	
Abscess and Ulcer ...	248	228	244	268	301	263	287	325	202	239	218	207	3,030	86·3	
Wounds and Accidents ...	305	296	286	269	324	202	199	232	204	275	227	362	3,181	90·6	
All other causes ...	409	423	443	477	624	553	538	659	470	568	414	327	5,905	168·1	
	4,301	3,562	3,662	4,144	5,526	4,485	4,605	5,873	4,378	5,175	3,756	3,488	62,055		
	Admitted per 1,000 of the Average Strength in each Month. *														
	125·9	103·5	105·6	115·8	155·8	126·8	130·4	166·8	124·6	147·8	105·7	98·6	1507·7		

EUROPEAN TROOPS, 1871.

III.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of the MADRAS PRESIDENCY during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Deaths out of Hospital.	Suicidal Deaths.
January ...	10,764	579	53·8	26	2·41	...	...	...	...	3	6	1	...	2	...	4	...	1	2	1	...	...	...	...	2	4	...
February ..	10,902	615	56·4	16	1·47	...	...	...	1	...	2	1	...	...	...	4	...	..	2	...	...	...	...	...	...	5	1
March ...	11,056	590	53·4	9	·81	...	...	...	1	...	...	...	1	1	...	2	...	1	1	...	...	...	...	...	...	2	...
April ...	11,061	600	54·2	18	1·63	...	...	...	1	...	1	3	1	2	...	3	...	...	1	1	...	...	...	..	2	1	2
May ...	10,969	603	55·0	43	3·92	32	...	...	1	...	...	1	1	3	...	..	...	...	2	1	...	...	...	..	2	...	...
June ...	10,938	665	60·8	11	1·01	3	...	...	1	...	...	...	..	2	...	3	...	...	...	1	...	...	...	...	1	...	...
July ...	10,913	690	63·2	16	1·46	1	...	...	1	...	3	...	1	2	...	2	...	1	...	1	...	...	...	...	2	1	1
August ...	10,895	658	60·4	18	1·65	...	...	...	...	...	1	...	1	3	...	6	...	...	2	2	...	...	...	...	3	1	...
September ...	10,854	641	59·1	15	1·38	...	...	...	...	...	1	...	..	3	...	4	...	...	3	...	...	...	...	..	3	...	1
October ...	10,139	607	59·9	16	1·58	...	...	...	...	...	2	...	2	3	...	4	...	1	2	...	...	..	...	..	1	1	...
November ...	11,049	621	56·2	14	1·27	...	...	...	...	...	...	...	...	1	...	3	...	...	2	5	...	...	...	...	1	...	2
December ...	10,583	616	58·2	16	1·51	...	...	...	...	...	...	...	...	3	...	4	...	1	4	1	...	...	...	...	1	...	2
						36	...	...	6	3	16	6	7	25	...	39	...	5	21	13	..	...	...	...	17	15	9
						Died per 1,000 of the Average Strength.																					
For the year ...	10,844	624	57·5	218	20·10	3·32	...	·83			1·47	·55	·65	2·31	...	3·59	...	·46	1·94	1·20	...	...	...	...	1·57	1·38	·83

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera	...	...	...	...	71	2	1	...	1	...	1	...	76	7·0	47·37
Smallpox	...	...	...	...	...	...	...	...	1	...	2	...	3	·3	...
Fever, Intermittent ...	87	109	61	79	100	94	73	146	92	49	42	52	984	90·7	...
„ Remittent ...	10	3	6	11	19	10	17	11	12	17	11	14	141	70·4	1·09
„ Continued ...	69	55	54	61	75	52	38	71	56	59	52	46	688		
Enteric Fever ...	16	2	...	2	3	3	6	1	9	2	...	5	48	4·4	31·25
Apoplexy ...	3	3	2	9	4	...	...	1	1	...	...	1	24	2·2	25·00
Delirium Tremens ...	7	7	7	7	7	11	10	10	7	7	8	6	94	8·7	7·45
Dysentery	69	55	31	34	61	77	74	105	68	89	60	69	792	73·0	3·16
Diarrhœa	38	23	54	40	66	72	65	102	56	53	34	52	655	60·4	...
Hepatitis	70	55	52	38	57	60	63	70	67	74	66	50	721	66·5	5·27
Spleen Disease ...	2	2	...	4	3	2	1	5	3	4	1	5	32	3·0	...
Respiratory Diseases ...	56	57	76	61	56	48	40	65	55	46	49	68	677	62·4	·74
Phthisis Pulmonalis ...	8	3	10	9	15	11	17	14	8	15	9	13	132	12·2	9·85
Scurvy ...	...	...	...	...	...	...	...	1	...	...	2	...	3	·3	...
Rheumatism ...	54	30	39	51	59	41	68	58	50	60	55	27	604	55·7	·47
Venereal Diseases ...	180	171	102	205	195	144	136	174	110	102	155	152	1,955	180·3	
Eye Diseases ...	9	16	14	20	17	10	22	22	18	13	19	9	189	17·4	
Abscess and Ulcer ...	109	90	113	110	162	132	97	124	85	123	82	91	1,327	122·4	
Wounds and Accidents .	100	119	102	97	118	94	89	103	85	103	92	134	1,236	114·0	
All other causes ...	204	162	187	204	246	230	273	265	171	258	180	178	2,558	235·9	
	1,100	971	970	1,051	1,334	1,096	1,080	1,348	945	1,134	920	972	12,939		
	Admitted per 1,000 of the Average Strength in each Month.														
	103·0	89·1	87·6	95·0	121·6	100·2	99·8	123·7	87·1	111·8	83·3	91·8	1193·2		

EUROPEAN TROOPS, 1871.

IV.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of the BOMBAY PRESIDENCY during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Deaths out of Hospital.	Suicidal Deaths.
January ...	10,223	517	50·6	14	1·37	...	...	...	1	...	2	1	...	...	...	1	...	1	2	3	...	...	...	1	1	1	...
February ...	10,874	511	47·0	15	1·38	...	...	.	1	...	1	1	...	1	...	4	...	...	1	4	...	...	...	...	2	...	...
March ...	10,223	526	51·4	13	1·27	...	...	...	...	...	1	..	...	2	...	3	...	1	2	1	...	...	...	...	2	1	...
April ...	11,072	569	51·4	11	·99	...	...	...	...	...	...	2	...	...	...	4	...	...	1	2	...	...	...	...	2	..	...
May ..	11,023	595	54·0	12	1·09	...	..	...	...	...	1	2	1	...	...	2	...	...	1	1	...	...	...	...	2	1	1
June ..	10,952	657	60·0	11	1·00	1	...	..	...	1	1	4	1	...	...	...	...	...	1	1	...	...	...	...	...	1	...
July ...	10,980	701	63·8	14	1·28	...	...	...	1	...	1	1	1	4	...	...	...	...	1	...	...	...	...	1	1	1	2
August ...	10,940	683	62·2	8	·73	...	...	...	...	...	1	1	..	1	1	1	...	..	...	...	...	...	...	...	3	...	...
September ...	10,970	634	57·8	15	1·37	...	.	...	1	...	4	..	1	1	1	4	...	...	...	...	...	...	...	1	1	1	...
October ...	10,921	613	56·1	18	1·65	...	...	..	..	2	3	1	...	...	...	...	...	...	4	1	...	1	...	...	3	2	1
November	11,011	604	54·9	12	1·09	...	.	1	2	..	...	..	2	...	1	1	...	..	...	2	...	...	...	...	2	...	1
December ...	10,852	486	44·8	9	·83	..		..	...	1	1	...	...	1	...	...	...	1	1	1	...	...	...	...	1	1	1
						1	...	1	6	4	16	13	6	10	3	20	...	3	14	16	...	1	.	3	20	9	6
						Died per 1,000 of the Average Strength.																					
For the year ...	10,840	592	54·6	152	14·02	·09	...	1·01			1·48	1·20	·55	·92	·28	1·85	...	·28	1·29	1·48	...	·09	...	·28	1·84	·83	·55

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ..	...	...	...	..	..	1	...	...	1	...	...	...	2	·2	50·00
Smallpox ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	401	250	330	291	474	550	644	681	530	652	422	307	5,532	510·3	...
„ Remittent ...	24	17	7	20	52	82	35	13	11	20	14	10	305	181·3	·46
„ Continued ...	41	29	121	128	270	159	269	170	110	173	144	53	1,669		
Enteric Fever ...	2	1	2	2	1	1	1	1	6	5	...	3	25	2·3	64·00
Apoplexy ..	3	1	1	3	6	13	4	1	2	1	...	2	37	3·4	35·13
Delirium Tremens ...	8	3	7	3	1	1	5	16	6	10	6	1	67	6·2	8·96
Dysentery ..	24	15	24	12	13	16	26	42	23	17	19	20	251	23·2	3·98
Diarrhœa ...	46	42	33	44	46	52	69	98	62	65	45	40	642	59·2	·47
Hepatitis ...	55	28	44	31	41	33	43	44	50	43	45	25	482	44·5	4·15
Spleen Disease ..	4	2	2	4	2	9	4	11	10	5	6	8	62	5·7	...
Respiratory Diseases ..	84	66	84	67	51	57	45	51	31	42	41	41	660	60·9	·45
Phthisis Pulmonalis ...	12	12	8	5	9	5	10	9	9	7	2	12	100	9·2	16·00
Scurvy ...	2	1	1	...	1	...	...	...	...	...	...	...	5	·5	20·00
Rheumatism ...	58	36	40	47	54	62	67	63	50	59	46	30	612	56·4	·54
Venereal Diseases ...	172	157	160	173	176	139	148	174	133	169	148	147	1,891	174·4	
Eye Diseases ...	22	18	32	35	37	24	21	29	34	22	18	10	292	26·9	
Abscess and Ulcer ...	98	71	64	93	151	87	58	98	58	95	61	75	1,009	93·1	
Wounds and Accidents ...	78	63	75	79	125	74	67	73	78	93	89	84	978	90·2	
All other causes ...	134	119	104	146	148	157	203	321	119	151	126	111	1,839	169·7	
	1,271	931	1,129	1,183	1,658	1,522	1,704	1,895	1,323	1,620	1,232	974	16,451		
	Admitted per 1,000 of the Average Strength in each Month.														
	124·3	85·6	110·4	106·8	150·1	139·0	155·2	172·6	120·6	149·2	111·9	89·7	1517·6		

EUROPEAN TROOPS, 1871.

V.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY in the ARMIES of the THREE PRESIDENCIES for the Year 1871.

	Ratios per 1,000 of Strength.			
	Army of Bengal.	Army of Madras.	Army of Bombay.	Army of India.
1.—Average Daily Sick-rate of each Month.				
January	51·2	53·5	50·6	51·6
February	53·8	56·4	47·0	53·0
March	54·2	53·4	51·4	53·5
April	54·0	54·2	51·4	53·6
May	60·2	55·0	54·0	58·0
June	63·6	60·8	60·0	62·3
July	65·0	63·2	63·8	64·5
August	69·4	60·4	62·2	66·3
September	69·1	59·1	57·8	65·0
October	63·9	59·9	56·1	61·7
November	54·5	56·2	54·9	55·0
December	50·0	58·2	44·8	50·5
Average of the Year	59·2	57·5	54·6	57·9
2.—Composition of the Admission-rate of the Year.				
Cholera	1·2	7·0	·2	2·1
Intermittent Fevers	417·3	90·7	510·3	372·7
Remittent and Continued Fevers	173·2	76·4	181·3	156·3
Enteric Fever	3·8	4·4	2·3	3·6
Apoplexy	1·8	2·2	3·4	2·2
Delirium Tremens	3·7	8·7	6·2	5·1
Dysentery	34·2	73·0	23·2	39·5
Diarrhœa	64·7	60·4	59·2	62·8
Hepatitis	59·7	66·5	44·5	58·1
Spleen Disease	8·0	3·0	5·7	6·6
Respiratory Diseases	85·0	62·1	60·9	76·1
Phthisis Pulmonalis	9·0	12·2	9·2	9·7
Rheumatism	67·7	55·7	56·4	63·2
Venereal Diseases	208·8	180·3	174·4	196·8
Eye Diseases	24·0	17·4	26·9	23·3
Abscess and Ulcer	86·3	122·4	93·1	94·5
Wounds and Accidents	90·6	114·0	90·2	95·0
All other causes	168·7	236·5	170·2	182·0
Admission-rate of the Year	1507·7	1193·2	1517·6	1449·6
3.—Composition of the Death-rate of the Year				
Cholera	·71	3·32	·09	1·09
Intermittent Fevers	...	...	·09	·02
Remittent and Continued Fevers	2·25	·83	·02	1·72
Enteric Fever	1·71	1·47	1·48	1·62
Apoplexy	·80	·55	1·20	·83
Delirium Tremens	·25	·65	·55	·39
Dysentery	1·17	2·31	·92	1·34
Diarrhœa	·12	...	·28	·12
Hepatitis	2·73	3·59	1·85	2·73
Spleen Disease	·03	...	...	·02
Respiratory Diseases	1·37	·16	·28	·99
Heart Diseases	1·65	1·94	1·29	1·63
Phthisis Pulmonalis	1·65	1·20	1·48	1·58
Injuries	1·17	1·38	1·11	1·10
Suicidal Deaths	·57	·83	·55	·62
All other causes	1·65	1·57	1·93	1·69
Death-rate of the Year	17·83	20·10	14·02	17·53
	Died out of each hundred cases treated.			
4.—Mortality relative to the number treated.				
Cholera	61·00	47·37	...	52·10
Remittent and Continued Fevers	1·28	1·09	·46	1·08
Enteric Fever	44·78	31·25	64·00	13·96*
Apoplexy	43·75	25·00	35·13	37·60
Delirium Tremens	6·98	7·45	8·96	7·59
Dysentery	3·41	3·16	3·59	3·34
Hepatitis	4·58	5·27	4·15	4·67
Respiratory Diseases	1·61	·74	·45	1·30
Phthisis Pulmonalis	17·92	9·85	16·00	15·64

* See Note to Table IX.

EUROPEAN TROOPS, 1871.

VI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in ***BENGAL PROPER*** *during the Year* 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	2,016	98	48·6	3	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1
February ...	2,111	114	54·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March ...	2,078	88	42·3	4	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
April ...	2,067	91	44·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	2,051	92	44·9	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
June ...	2,047	101	49·3	4	...	...	...	...	...	...	...	...	...	...	...	3	...	...	1	...	...	...	...	...	...	...
July ...	2,016	107	52·3	4	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...
August ...	2,026	106	52·3	4	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2
September ...	2,025	114	56·3	3	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...
October ...	2,017	104	51·5	6	...	...	...	...	...	...	...	...	1	1	...	2	...	...	2	...	...	...	...	...	...	...
November ...	1,516	84	55·4	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	...
December ...	1,699	88	51·8	3	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
						1	...	...	...	...	2	1	1	1	...	16	...	...	5	2	...	...	1	...	3	4
						Died per 1,000 of the Average Strength.																				
For the year ...	1,975	99	50·1	37	18·72	·51	...		...		1·00	·51	·51	·51	...	8·10	...	...	2·53	1·00	...	...	·51	...	1·52	2·02

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	...	...	1	...	...	...	...	...	1	2	1·0	50·00
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	22	16	2	10	10	9	9	7	12	16	42	37	192	97·2	...
„ Remittent ...	7	2	18	8	9	21	42	25	17	43	28	6	226	268·9	...
„ Continued ...	20	20	19	27	55	29	18	32	34	26	12	13	305		...
Enteric Fever ...	2	4	1	...	...	...	1	...	...	...	...	...	8	4·1	25·00
Apoplexy	2	...	...	1	...	...	...	...	1	...	...	...	4	2·0	25·00
Delirium Tremens ...	1	1	...	1	...	...	...	1	...	1	...	...	5	2·5	20·00
Dysentery	11	8	2	3	6	12	9	11	4	13	6	8	93	47·1	1·08
Diarrhœa	3	3	2	5	2	9	19	20	15	26	11	9	124	62·8	...
Hepatitis	13	15	7	6	13	28	27	31	19	15	8	18	200	101·3	8·00
Spleen Disease ...	1	1	1	3	1	...	1	1	3	2	...	...	14	7·1	...
Respiratory Diseases ...	5	4	6	8	12	4	7	10	4	3	4	10	77	39·0	...
Phthisis Pulmonalis ...	1	...	1	...	3	3	...	...	1	...	2	1	12	6·1	16·67
Scurvy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism... ...	9	6	9	8	10	7	9	6	7	12	6	4	93	47·1	·70
Venereal Diseases ...	55	35	29	25	33	16	11	28	19	10	19	26	306	154·9	
Eye Diseases ...	3	4	2	...	1	1	3	2	1	1	1	2	21	10·6	
Abscess and Ulcer ...	18	12	15	15	23	10	18	19	7	19	9	7	172	87·1	
Wounds and Accidents ...	23	21	20	12	23	17	15	17	14	14	13	25	214	108·3	
All other causes ...	32	31	57	38	34	30	37	75	35	63	24	26	482	244·1	
	228	183	191	170	235	197	226	285	193	264	185	193	2,550		
	Admitted per 1,000 of the Average Strength in each Month.														
	113·1	86·7	91·9	82·2	114·6	96·2	110·5	140·7	95·3	130·9	122·0	113·6	1291·2		

EUROPEAN TROOPS, 1871.

VII.

***TABLE** showing the **SICKNESS** and **MORTALITY** among the **EUROPEAN TROOPS** serving in the **DINAPORE, BENARES, OUDE** and **CAWNPORE DISTRICTS** during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ..	7,784	407	52·3	8	...	...	...	...	...	...	3	...	...	...	...	2	...	...	...	1	...	...	...	...	...	2
February ...	8,599	490	57·0	11	...	...	...	.	...	..	2	...	...	1	...	2	..	3	...	1	...	..	...	...	1	1
March ...	8,430	483	57·2	13	...	2	...	...	...	...	1	1	...	1	..	4	...	...	3	...	...	...	...	...	...	1
April ...	8,223	489	59·5	8	...	3	...	...	...	1	1	...	...	1	..	...	...	..	...	...	..	...	...	...	1	1
May ...	8,210	529	64·3	14	...	1	...	...	1	1	...	2	...	4	...	2	...	...	...	2	...	...	...	...	1	...
June ...	8,218	547	66·6	8	...	2	...	...	1	1	..	3	...	...	...	...	...	1	...	...	...	...	...	...	..	...
July ...	8,170	549	67·2	12	...	1	...	..	.	...	3	...	...	2	...	4	...	...	...	1	...	...	..	.	...	1
August ...	8,144	587	72·1	24	...	2	...	...	3	...	5	1	...	5	...	3	...	...	...	1	...	...	1	...	2	1
September ...	8,108	584	72·0	8	...	1	...	.	4	1	...	...	..	..	...	1	...	...	...	...	...	..	...	...	...	1
October ...	8,163	553	67·7	8	...	...	...	...	1	...	..	1	...	...	1	2	...	...	..	...	..	..	...	1	...	2
November ...	7,907	459	58·0	24	...	11	..	...	...	...	1	...	..	1	...	3	...	...	2	2	...	...	...	...	1	3
December ...	7,526	402	53·4	11	...	...	...	...	1	...	2	...	...	1	...	...	...	...	3	1	...	...	...	1	1	1
						23	...	...	11	4	18	8	...	16	1	23	...	4	8	9	...	...	1	2	7	14
						Died per 1,000 of the Average Strength.																				
For the year ...	8,126	507	62·4	149	18·34	2·83	...	1·85			2·21	·99	...	1·97	·12	2·83	...	·49	·99	1·11	...	...	·12	·25	·86	1·72

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	3	3	1	2	2	2	1	...	23	1	38	4·7	60·53
Smallpox ...	...	...	...	1	1	...	...	...	...	...	...	...	2	·2	...
Fever, Intermittent ...	88	108	72	83	111	148	190	202	198	255	123	78	1,659	204·2	...
„ Remittent ...	1	2	3	1	10	11	11	45	47	48	11	10	200	138·1	1·34
„ Continued ...	42	35	75	127	103	70	94	111	105	95	35	27	922		
Enteric Fever ...	9	3	2	4	5	7	3	4	2	...	3	5	47	5·8	38·30
Apoplexy ...	...	...	1	...	2	5	...	1	1	1	...	...	11	1·4	72·73
Delirium Tremens ...	2	2	1	1	3	3	2	2	3	...	3	...	22	2·7	...
Dysentery ...	18	15	24	25	36	30	23	34	19	22	29	26	301	37·0	5·31
Diarrhœa ...	35	26	35	43	29	28	47	56	37	20	46	33	435	53·5	·23
Hepatitis ...	23	33	31	32	45	45	53	49	41	51	29	29	461	56·7	5·00
Spleen Disease ...	5	...	3	4	4	4	5	3	2	5	1	1	37	4·6	...
Respiratory Diseases ...	46	34	38	41	28	35	34	49	27	31	26	39	428	52·7	·93
Phthisis Pulmonalis ...	3	3	1	6	5	3	2	7	6	11	13	7	67	8·2	13·43
Scurvy ...	...	...	...	...	...	1	...	...	...	...	...	1	2	·2	...
Rheumatism ...	38	30	40	24	30	42	37	46	36	47	31	30	431	53·1	·31
Venereal Diseases ...	259	210	207	186	248	179	151	185	160	208	130	150	2,333	287·1	
Eye Diseases ...	11	13	28	20	32	50	26	37	18	21	12	8	285	35·1	
Abscess and Ulcer ...	61	47	61	64	81	77	77	80	56	57	49	56	772	95·0	
Wounds and Accidents ...	53	55	49	47	92	41	44	48	32	60	42	71	634	78·0	
All other causes ...	85	113	86	88	134	118	101	142	119	122	92	88	1,288	158·5	
	779	729	760	809	1,003	899	902	1,112	910	1,114	698	660	10,375		
	Admitted per 1,000 of the Average Strength in each Month.														
	100·1	84·8	90·1	98·4	122·0	109·4	110·4	136·5	112·2	136·5	88·3	87·7	1276·8		

EUROPEAN TROOPS, 1871.

VIII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the MEERUT and ROHILCUND DISTRICTS during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	4,322	233	53·9	7	...	...	1	...	...	...	...	...	1	...	...	3	...	...	1	...	...	...	...	...	1	...
February ..	4,761	293	61·5	3	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
March ...	4,739	309	65·2	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	1
April ...	4,238	226	53·3	5	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	2	1
May ..	4,262	265	62·2	10	...	...	...	...	1	...	2	1	...	...	...	2	...	...	2	...	...	...	...	...	2	...
June ..	4,241	270	63·7	11	...	...	...	...	1	...	2	...	...	1	...	1	...	1	3	1	...	...	...	...	1	...
July ...	4,220	275	65·0	3	...	...	...	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
August ...	4,226	310	75·5	5	...	...	...	...	..	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2	...
September ...	4,220	344	81·5	6	...	...	...	...	...	...	...	...	1	...	...	1	..	...	1	1	...	...	...	...	1	1
October ...	4,221	318	75·3	8	...	...	...	...	1	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	3	...
November .	3,659	240	67·2	3	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...
December ...	3,698	196	53·0	5	...	...	...	...	...	...	...	...	...	3	1	...	...	...	...	1	...	...	...	...	...	...
						...	1	...	4	1	8	1	2	6	1	15	...	2	8	4	...	...	...	...	12	5
						Died per 1,000 of the Average Strength.																				
For the year ...	4,234	275	65·0	70	16·53	...	·23	1·18			1·89	·23	·47	1·42	·23	3·55	...	·47	1·89	·95	...	...	...	...	2·84	1·18

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	2	...	...	...	..	...	...	...	...	...	...	...	2	·5	50·00
Fever, Intermittent ...	98	81	75	65	140	137	150	309	201	282	150	79	1,776	419·5	...
„ Remittent ...	3	6	8	8	15	9	20	15	18	12	6	1	121	152·1	·78
„ Continued ...	15	28	25	21	63	24	39	121	117	62	11	4	523		
Enteric Fever ..	3	2	...	...	5	1	1	2	...	5	1	...	20	4·7	40·00
Apoplexy ...	...	...	2	...	...	...	1	...	...	...	3	...	6	1·4	16·67
Delirium Tremens ...	4	...	2	1	1	...	5	2	1	...	...	...	16	3·8	12·50
Dysentery ...	16	9	11	11	21	15	18	27	29	22	22	32	233	55·0	2·58
Diarrhœa ...	21	31	29	43	39	20	21	39	20	33	21	15	332	78·4	·30
Hepatitis ...	21	42	27	26	33	18	22	32	30	24	25	15	315	74·4	4·76
Spleen Disease ..	4	6	4	2	4	3	3	3	7	6	5	2	49	11·6	...
Respiratory Diseases ...	39	47	63	57	63	43	54	60	50	34	41	31	582	137·5	·34
Phthisis Pulmonalis ...	2	4	2	2	4	4	4	12	9	5	3	2	53	12·5	7·55
Scurvy ..	...	...	...	...	...	2	...	...	...	1	1	...	4	1·0	...
Rheumatism ...	25	40	24	16	30	32	21	24	20	38	26	18	314	74·2	·67
Venereal Diseases ...	129	104	119	89	61	40	35	37	34	43	45	64	800	188·9	
Eye Diseases ...	10	14	13	11	7	6	4	7	6	5	1	7	91	21·5	
Abscess and Ulcer ...	43	47	39	40	51	38	41	50	36	35	30	32	482	113·8	
Wounds and Accidents ...	51	57	50	31	39	21	26	30	33	31	24	22	415	98·0	
All other causes ...	69	86	87	62	90	72	71	108	70	72	54	41	891	210·4	
	555	604	580	485	668	491	536	878	681	710	469	365	7,026		
	Admitted per 1,000 of the Average Strength in each Month.														
	128·4	126·9	122·4	114·4	156·7	116·5	126·7	207·8	161·4	168·2	128·2	98·7	1659·2		

EUROPEAN TROOPS, 1871.

IX.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the AGRA DISTRICT and in CENTRAL INDIA during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	4,158	227	54·6	7	...	...	...	...	1	...	...	...	...	...	...	...	...	3	1	...	...	..	...	1	1	...
February ...	3,831	184	48·0	5	...	...	...	...	...	..	...	..	...		..	3	...	...	...	1	..	...	...	...	...	1
March ...	4,255	213	50·1	3	...	...	...	...	..	...	1	...	...	...	...	1	...	...	...	...	...	..	...	...	...	1
April ..	4,188	224	53·5	5	...	...	...	...	3	...	...	...	...	...	..	...	...	...	2	...	...	...	...	...	...	...
May ...	4,150	240	57·8	6	...	...	...	...	3	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
June ...	4,122	255	61·9	5	...	...	...	...	..	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	2
July ...	4,211	281	66·7	4	...	...	...	..	1	..	1	...	...	...	...	1	..	...	..	...	...	...	...	...	1	...
August ...	4,201	333	79·3	9	...	...	...	...	2	..	1	...	...	1	...	1	...	...	2	...	...	...	..	...	2	...
September ..	4,189	348	83·1	10	...	1	...	...	1	1	4	...	...	2	...	...	.	...	1	...	...	...	...	...	...	...
October ...	4,208	352	83·6	7	...	...	..	...	1	1	...	...	...	...	...	3	.	...	...	...	...	...	...	...	1	1
November ...	3,677	279	75·9	9	...	...	...	...	4	...	1	...	...	1	...	...	...	...	1	...	...	...	...	..	2	...
December ...	4,238	260	61·4	6	...	...	...	...	1	...	...	...	...	...	...	2	..	..	1	1	...	...	...	...	...	1
						1	...	...	17	4	8	1	...	4	...	11	...	3	9	3	...	...	...	1	8	6
						Died per 1,000 of the Average Strength.																				
For the year ...	4,120	266	64·6	76	18·45	·24	...		5·10		1·94	·24	...	·97	...	2·67	...	·73	2·19	·73	...	...	...	·24	1·94	1·46

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	1	...	...	...	1	·2	100·00
Smallpox ...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Fever, Intermittent ...	193	111	106	162	187	163	254	464	447	759	437	328	3,611	876·5	...
„ Remittent ...	3	7	5	39	35	8	6	13	42	41	38	36	270	187·4	2·72
„ Continued ...	16	20	35	49	58	34	63	113	59	28	15	6	496		
Enteric Fever ...	...	1	1	...	...	1	...	1	2	...	1	1	8	1·9	100·00*
Apoplexy ...	...	...	...	...	...	2	1	...	1	1	...	...	5	1·2	20·00
Delirium Tremens ...	1	2	2	2	3	1	6	3	2	2	...	...	24	5·8	...
Dysentery ...	7	8	8	5	6	10	9	31	8	10	4	2	108	26·2	3·70
Diarrhœa ...	16	23	27	20	12	6	23	23	19	4	9	9	191	46·4	...
Hepatitis ...	8	12	10	9	18	18	15	21	21	19	9	12	172	41·7	6·40
Spleen Disease ...	1	1	...	4	3	4	4	4	5	18	7	6	57	13·8	...
Respiratory Diseases ...	45	24	23	23	32	21	26	30	18	27	10	23	302	73·3	·99
Phthisis Pulmonalis ...	2	...	2	3	3	1	3	2	2	...	2	...	20	4·9	15·00
Scurvy ..	...	...	...	...	...	...	...	...	...	...	1	...	1	·2	...
Rheumatism ...	30	33	20	14	24	20	24	24	18	16	16	28	276	67·0	·07
Venereal Diseases ...	86	53	79	63	80	61	71	88	51	68	47	95	842	204·4	
Eye Diseases ...	9	6	14	11	6	5	12	13	2	17	2	9	109	26·5	
Abscess and Ulcer ...	35	35	36	27	39	39	33	35	19	36	31	22	390	94·7	
Wounds and Accidents ..	49	49	33	37	39	32	23	35	30	33	14	34	408	99·0	
All other causes ...	53	44	55	45	66	46	73	71	55	67	38	32	648	157·3	
	554	420	465	516	611	472	646	974	802	1,149	684	643	7,945		
	Admitted per 1,000 of the Average Strength in each Month.														
	133·2	112·0	109·3	123·2	147·2	114·5	153·4	231·9	191·5	273·1	186·0	151·7	1928·4		

* Cases returned after *post mortem* examination without corresponding admissions have exaggerated this death-rate.

EUROPEAN TROOPS, 1871.

X.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the PUNJAB during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																				
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	11,036	630	52·8	17	...	...	...	..	1	...	...	...	...	...	...	1	...	5	2	2	...	...	...	...	5	1
February ..	11,474	597	52·0	8	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	2	...	...	...	...	2	1
March ...	11,600	571	49·6	12	...	...	...	...	1	2	1	...	...	...	...	...	...	...	2	1	...	...	...	...	2	3
April ...	11,558	528	45·7	10	...	...	...	...	3	1	1	...	...	...	...	1	...	1	...	1	...	...	...	...	1	1
May ...	10,090	561	55·9	10	...	...	...	...	...	...	1	...	...	...	...	2	...	1	1	4	...	...	...	...	...	1
June ...	9,923	610	61·5	24	...	...	...	...	5	...	4	5	3	2	...	...	...	...	1	3	...	...	...	...	1	...
July ...	9,764	597	61·1	15	...	...	...	...	3	...	3	1	1	1	...	1	...	1	...	...	...	...	1	...	1	2
August ...	9,708	669	68·9	23	...	...	...	...	3	...	3	5	1	1	...	1	...	...	2	3	...	...	...	...	2	2
September ...	9,650	628	65·1	20	...	...	...	...	5	...	3	2	...	...	...	5	1	...	1	1	...	...	...	...	1	1
October ..	10,037	568	56·6	18	...	...	...	...	3	...	2	...	1	1	...	2	...	2	1	3	...	...	...	...	2	1
November ...	12,637	617	48·8	17	...	...	...	...	1	...	1	...	...	1	...	4	...	...	3	3	...	...	...	...	...	4
December ...	14,724	634	43·1	27	...	...	...	...	2	..	1	...	...	...	...	...	...	16	3	1	...	...	...	...	1	3
						...	...	...	27	3	22	13	6	7	...	17	1	26	16	24	...	...	1	...	18	20
						Died per 1,000 of the Average Strength.																				
For the year...	11,081*	601	51·2	201	18·13	...	...	2·71			1·98	1·17	·54	·63	...	1·54	·09	2·35	1·44	2·17	...	...	·09	...	1·62	1·80

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	...	...	...	2	3	...	...	...	...	...	1	2	8	·7	...
Fever, Intermittent ...	794	439	437	393	629	427	499	641	342	456	417	285	5,759	519·6	...
,, Remittent ..	7	6	4	20	35	42	40	56	37	38	20	5	319	247·7	1·09
,, Continued ...	30	60	63	109	534	414	278	364	220	126	64	45	2,427		
Enteric Fever ...	3	3	2	2	2	4	5	7	12	3	8	1	47	4·3	46·81
Apoplexy ...	...	...	...	...	...	13	5	10	2	...	...	...	30	2·7	43·33
Delirium Tremens ...	1	...	4	4	2	5	4	6	3	5	2	5	41	3·7	14·64
Dysentery ...	26	19	12	16	33	21	17	28	33	41	29	33	308	27·8	2·27
Diarrhœa ...	44	22	28	57	62	41	85	81	60	43	45	83	651	58·7	...
Hepatitis ...	38	47	47	34	50	59	65	77	55	60	47	23	592	53·4	2·87
Spleen Disease ...	12	9	11	7	8	12	8	4	7	5	3	6	91	8·2	1·10
Respiratory Diseases ...	187	110	104	76	70	81	40	56	41	64	69	145	993	89·6	2·62
Phthisis Pulmonalis ...	9	2	3	3	3	4	7	9	8	11	10	10	79	7·2	30·38
Scurvy ...	1	...	1	...	...	...	...	1	...	...	...	...	3	·3	...
Rheumatism ...	102	57	51	54	68	42	41	35	43	62	81	66	702	63·3	·55
Venereal Diseases ...	202	190	176	156	150	115	104	136	123	134	190	232	1,908	172·1	
Eye Diseases ...	18	9	14	26	19	16	22	42	21	20	23	26	256	23·1	
Abscess and Ulcer ...	73	67	67	73	73	65	82	90	51	53	72	71	837	75·5	
Wounds and Accidents	97	85	90	104	79	53	54	60	43	88	91	182	1,026	92·6	
All other causes ...	113	101	107	133	156	165	142	161	106	170	136	104	1,594	143·8	
	1,757	1,226	1,221	1,359	1,976	1,559	1,497	1,864	1,207	1,379	1,303	1,323	17,671		
	Admitted per 1,000 of the Average Strength in each Month.														
	147·2	106·9	106·1	117·6	195·8	157·1	153·3	192·0	125·1	137·4	103·1	89·9	1594·3		

---

* The Strength from May to October is diminished by the removal of men to the Hills, sent to Convalescent Depôts or detached as working parties.

EUROPEAN TROOPS, 1871.

XI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS occupying HILL STATIONS during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhoea.	Hepatitis	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anaemia.	Wounds and Accidents.	All other Causes.	
January ...	2,262	85	37·6	4	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...
February ...	2,829	137	48·4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
March ...	3,066	150	49·1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
April ...	3,174	182	57·3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	4,551	241	53·0	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
June ...	4,568	252	55·2	6	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	1	..	...	...	1	...	...
July ...	4,532	258	56·9	6	...	...	...	...	...	...	1	...	...	1	...	2	...	1	...	1	...	...	...	...	...	...
August ...	4,587	214	46·6	6	...	...	...	...	1	...	...	...	...	1	...	1	...	...	2	...	.	1	...	...	...	...
September ...	4,599	206	44·8	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
October ...	4,425	182	41·1	1	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	1	...	...	...	...	...	...
November ...	3,000	109	36·3	4	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	1	...
December ...	2,245	106	47·2	1	...	...	...	...	...	..	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
						...	...	...	1	...	1	...	...	5	2	6	...	6	5	3	..	1	...	1	1	1
						Died per 1,000 of the Average Strength.																				
For the year ...	3,652	177	48·5	33	9·04	...	...		·27		·27	...	...	1·37	·55	1·65	...	1·65	1·37	·83	...	·27	...	·27	·27	·27

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	44	41	35	53	170	140	119	133	61	54	16	15	881	241·2	...
„ Remittent ...	...	...	...	1	3	6	1	1	2	2	...	...	16	32·3	·85
„ Continued ...	3	3	3	3	13	15	12	13	14	17	2	4	102		
Enteric Fever ...	...	...	...	...	...	1	...	...	...	...	...	...	1	·3	...
Apoplexy ...	...	...	...	1	...	...	...	...	...	...	...	...	1	·3	...
Delirium Tremens ...	...	...	...	1	1	2	2	1	1	1	1	...	10	2·7	...
Dysentery ...	3	2	2	8	16	18	5	10	12	6	4	3	89	24·4	5·62
Diarrhoea ...	6	11	14	17	27	46	82	19	34	23	15	11	305	83·5	·66
Hepatitis ...	5	7	12	12	18	18	16	16	13	15	8	5	145	39·7	4·14
Spleen Disease ...	1	2	...	3	1	1	2	...	1	2	...	...	13	3·6	...
Respiratory Diseases ...	50	61	47	21	43	23	23	22	20	27	15	21	373	102·1	1·61
Phthisis Pulmonalis ..	...	3	2	2	...	5	4	3	3	2	3	...	27	7·4	11·11
Scurvy ..	...	...	...	...	1	...	...	...	...	...	...	...	1	·3	...
Rheumatism ..	8	23	35	27	65	43	40	27	15	20	14	15	341	93·4	·38
Venereal Diseases ...	44	64	93	86	81	55	46	50	34	53	33	49	688	188·4	
Eye Diseases ...	1	...	1	5	7	4	1	6	4	3	3	1	36	9·9	
Abscess and Ulcer ...	8	19	18	20	25	23	25	34	26	29	11	13	251	68·7	
Wounds and Accidents ...	14	23	38	27	42	24	22	29	32	33	22	17	323	88·4	
All other causes ...	22	32	29	34	61	65	58	45	43	41	25	13	468	128·1	
	209	291	329	318	574	489	458	409	315	340	172	167	4,071		
	Admitted per 1,000 of the Average Strength in each Month.														
	92·4	102·8	107·7	100·2	126·1	107·1	101·1	89·2	68·5	76·8	57·3	74·4	1114·7		

EUROPEAN TROOPS, 1871.

XII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN SOLDIERS occupying the HILL CONVALESCENT DEPOTS of the BENGAL PRESIDENCY during the HOT SEASON of 1871, *and the prevalence of the principal Diseases in each Month of the Period.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																					Died out of Hospital.
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	360	9	...	1	..	...	...	...	...	...	...	1‡	...	...	...	...	...	...	...	...	...	...	...	...	...		...
February ...	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...
March ...	120	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...
April ...	1,647	135	82·0	6	...	...	...	...	1	...	...	1	...	...	...	1	...	1	...	1	...	...	...	...	...		1
May ...	2,136	204	95·5	4	...	...	...	...	1	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...		...
June ...	2,249	213	94·7	5	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	1	...	1		...
July ...	2,345	228	97·2	3	...	..	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...		...
August ...	2,316	215	92·9	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...		1
September ...	2,331	203	87·1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...		...
October ..	1,936	160	82·6	5	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2	1	...	...	...	...	...		...
November ...	885	84	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...		...
December ...	581	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...
						...	...	...	4	...	...	2	...	1	...	5	...	6	3	5	...	...	1	...	1		2
						Died per 1,000 of the Average Strength.																					
For the season	2,275*	213	93·1	30	12·75†	...	...	1·76			...	·44	...	·44	...	2·20	...	2·63	1·32	2·20	...	...	·44	...	·44		·88

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength, April to October (7 months).	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox	...	...	...	...	..	...	...	..	...	...	...	...	...	...	...
Fever, Intermittent ...	2	...	9	95	112	127	82	108	79	31	12	5	692	291·9	...
„ Remittent .	...	...	...	5	6	7	8	5	5	3	1	...	40	49·7	3·54
„ Continued ...	1	..	...	13	9	7	11	11	9	14	4	1	80		
Enteric Fever	...	...	...	2	...	...	...	...	1	...	...	...	3	1·3	...
Apoplexy	1	...	...	2	...	...	...	...	...	...	...	...	3	·9	50·00
Delirium Tremens ...	...	. .	...	...	1	2	...	2	1	2	...	1	9	3·5	...
Dysentery	1	...	...	15	12	3	2	5	3	1	4	1	47	18·0	2·44
Diarrhœa	3	...	1	24	30	28	41	38	14	16	2	2	199	84·0	...
Hepatitis	2	...	...	26	24	32	32	19	10	15	12	1	182	73·4	3·00
Spleen Disease	...	...	...	1	4	6	4	...	3	1	...	...	19	8·4	...
Respiratory Diseases ...	2	...	1	24	57	27	12	14	12	21	13	4	187	73·4	3·00
Phthisis Pulmonalis ...	1	...	...	5	8	8	2	3	1	3	2	1	23	8·4	26·32
Scurvy	...	...	...	...	...	...	...	1	...	...	...	...	1	·4	...
Rheumatism ...	1	...	6	33	28	21	16	16	17	14	7	6	165	63·7	·49
Venereal Diseases ...	5	...	6	64	41	29	47	45	32	35	8	12	327	130·1	
Eye Diseases .	1	...	2	2	6	1	...	3	5	7	1	1	29	10·5	
Abscess and Ulcer ..	...	...	3	24	9	11	11	11	7	9	5	4	94	36·0	
Wounds and Accidents	5	. .	4	6	10	14	15	13	20	16	9	7	119	41·3	
All other causes ...	2	...	7	68	71	56	56	53	42	30	25	14	427	166·6	
	27	...	39	409	459	374	330	346	270	218	105	60	2,646		
	Admitted per 1,000 of the Average Strength in each Month.														
	...	...	...	248·3	214·9	166·3	144·6	140·4	115·8	112·6	...	...	1061·5		

---

* The average strength of the season from May to September.
† The equivalent of 29 deaths out of the number sent to the hills during the season of 1871.
‡ Not included in the calculation of the ratios.

EUROPEAN TROOPS, 1871.

XIII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in RAJPOOTANA, MALWA, SCINDE and ADEN during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																				
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	5,434	274	50·4	7	...	...	...	...	...	...	2	1	...	...	...	...	...	...	1	2	...	...	...	1	...	...
February ...	5,535	275	49·7	4	...	...	...	...	1	...	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
March ...	5,628	311	55·3	7	...	...	...	...	...	...	...	...	...	2	...	2	...	1	1	...	...	...	...	...	...	1
April ...	5,619	313	55·7	6	...	...	...	...	...	...	...	1	...	...	...	2	...	...	1	1	...	...	...	...	1	...
May ...	5,611	306	54·5	5	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	2
June ...	5,592	342	61·2	7	...	1	...	...	...	...	1	4	...	...	...	...	...	...	...	1	...	...	...	...	...	...
July ...	5,692	334	58·7	9	...	...	...	...	...	...	1	1	1	2	...	...	...	...	1	...	...	...	...	...	1	2
August ...	5,708	343	60·1	5	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...
September ...	5,695	346	60·8	12	...	...	...	...	1	...	4	...	1	1	1	3	...	...	...	...	...	...	...	...	1	...
October ...	5,694	338	59·4	9	...	...	...	...	...	...	3	1	...	...	1	...	...	...	2	1	...	1	...	...	...	1
November ...	5,635	333	59·1	9	...	...	...	1	2	...	...	...	1	...	...	1	...	...	...	2	...	...	...	...	1	1
December ...	5,598	242	43·2	6	...	...	...	...	...	1	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	2
						1	...	1	4	1	15	11	3	6	2	8	...	2	7	7	...	1	...	1	7	9
						Died per 1,000 of the Average Strength.																				
For the year ...	5,620	313	55·7	86	15·30	·18	...	1·07			2·67	1·96	·53	1·07	·36	1·42	..	·36	1·24	1·24	..	·18	..	·18	1·24	1·60

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	1	...	...	...	...	...	...	1	·2	100,00
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	312	189	255	221	337	287	274	394	374	470	247	152	3,512	624·9	·03
„ Remittent ...	10	5	...	6	17	8	11	12	9	17	13	7	115	126·5	·70
„ Continued ...	17	10	95	95	70	31	36	44	48	80	31	18	596		
Enteric Fever ...	2	1	1	2	1	1	1	1	6	5	...	3	21	4·3	62·50
Apoplexy ...	1	1	...	2	5	12	4	1	2	1	...	1	30	5·3	36·67
Delirium Tremens ...	4	2	3	1	...	...	5	7	5	6	4	...	37	6·6	8·11
Dysentery ...	16	8	22	9	7	12	17	24	14	12	13	12	166	29.5	3·61
Diarrhœa ...	33	33	29	28	34	40	52	61	47	41	28	18	444	79·0	·45
Hepatitis ...	25	18	28	15	24	20	24	33	30	32	31	16	296	52·7	2·70
Spleen Disease ...	...	...	1	2	1	3	2	8	8	4	6	2	37	6·6	...
Respiratory Diseases ...	53	47	51	44	29	31	22	21	17	31	30	23	399	71·0	·50
Phthisis Pulmonalis ...	...	3	2	2	5	2	2	4	3	3	1	6	33	5·9	21·21
Scurvy ...	...	...	1	...	1	...	...	...	...	...	...	...	2	·4	...
Rheumatism ...	33	22	33	29	36	43	47	44	30	43	32	15	407	72·4	·37
Venereal Diseases ...	86	87	93	90	111	86	95	106	83	105	83	104	1,129	200·9	
Eye Diseases ...	11	10	12	20	16	12	12	15	27	16	9	6	166	29·5	
Abscess and Ulcer ...	55	40	33	45	93	62	39	58	27	59	34	46	591	105·2	
Wounds and Accidents ...	40	36	47	39	60	40	44	46	40	58	35	51	545	96·9	
All other causes ...	62	67	55	77	90	111	162	269	77	101	61	68	1,203	214·1	
	709	588	761	727	937	805	849	1,148	817	1,093	661	548	9,733		
	Admitted per 1,000 of the Average Strength in each Month.														
	141·5	106·2	135·2	129·4	167·0	144·0	149·2	201·1	143·7	192·0	117·3	97·9	1731·9		

EUROPEAN TROOPS, 1871.

XIV.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the DECCAN and in NAGPORE during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

(The Garrison of Bombay, drawn chiefly from Regiments serving in the Deccan, is included in this Statement).

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	6,618	291	44·0	8	...	...	...	...	1	...	1	...	...	...	...	1	...	2	1	...	...	...	...	...	1	1
February ...	6,850	311	45·4	8	...	...	.	.	...	...	...	1	...	...	...	3	...	...	...	2	...	...	...	...	1	1
March ...	7,364	347	47·1	8	...	...	...	...	...	...	1	...	1	1	...	1	...	...	1	...	...	...	...	...	2	1
April ...	8,240	387	47·0	8	...	...	...	...	...	...	...	2	...	1	...	2	...	...	...	...	...	...	...	...	2	1
May ...	8,211	439	53·5	41	...	32	...	...	1	...	...	2	1	...	...	2	...	...	1	1	...	...	...	...	1	...
June ...	8,185	473	57·8	7	...	3	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1
July ...	8,203	517	63·0	6	...	1	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	...	...	1	...	...
August ...	8,197	487	59·4	11	...	...	...	...	...	...	1	...	...	1	.	4	...	...	2	...	...	...	...	...	2	1
September ...	8,168	449	55·0	11	...	..	...	...	...	...	1	...	...	2	...	4	...	...	...	...	...	...	...	1	1	2
October ...	7,545	424	56·2	12	...	...	...	...	...	2	1	..	...	...	..	2	...	...	2	...	...	...	...	...	4	1
November ...	8,408	454	54·0	10	...	...	...	...	...	...	...	...	1	1	1	2	...	...	...	2	...	...	...	...	1	2
December ...	7,416	369	49·8	8	...	...	...	...	..	...	...	.	...	3	...	3	...	...	1	1	...	...	...	...	...	...
						36	...	...	2	3	5	5	3	10	1	27	...	3	9	6	...	...	...	2	15	11
						Died per 1,000 of the Average Strength.																				
For the year ...	7,783	412	52·9	138	17·73	4·63	...	·63			·63	·63	·39	1·28	·13	3·47	...	·39	1·16	·78	...	...	...	·26	1·93	1·42

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	...	...	71	2	1	...	1	...	...	...	75	9·6	48·00
Smallpox ...	...	...	...	...	...	...	...	...	1	...	...	...	1	·1	...
Fever, Intermittent ..	98	70	70	73	123	225	314	338	182	163	119	102	1,886	242·3	...
„ Remittent ...	11	10	11	22	48	79	31	10	13	18	12	15	280	197·1	·32
„ Continued ...	30	20	54	52	225	132	233	146	84	106	126	46	1,254		
Enteric Fever ...	...	...	1	...	1	...	...	1	7	1	...	1	12	1·5	41·67
Apoplexy ...	1	1	1	4	2	1	...	...	...	...	...	1	11	1·4	45·45
Delirium Tremens ..	7	3	6	3	1	3	1	11	2	6	5	3	51	6·6	5·88
Dysentery ...	17	8	10	8	11	11	26	46	37	52	23	31	280	36·0	3·57
Diarrhœa ...	18	9	22	18	34	38	34	89	47	36	30	26	401	51·5	·25
Hepatitis ...	28	10	24	18	30	22	20	23	31	32	34	21	293	37·6	9·22
Spleen Disease ...	3	2	1	3	2	7	2	3	3	3	...	1	30	3·9	...
Respiratory Diseases ...	29	22	46	37	27	27	31	41	29	25	34	43	391	50·3	·77
Phthisis Pulmonalis ...	6	2	1	2	4	4	7	9	5	6	4	4	54	6·9	11·11
Scurvy ...	1	...	...	...	...	...	...	..	...	...	1	...	2	·3	...
Rheumatism ...	37	23	18	26	30	32	37	37	36	28	32	16	352	45·2	·58
Venereal Diseases ..	110	120	126	144	144	97	98	131	81	122	120	108	1,401	180·0	
Eye Diseases ...	15	12	15	20	26	15	15	22	18	8	16	8	190	24·4	
Abscess and Ulcer ...	63	36	73	80	105	52	49	65	46	68	49	51	737	94·7	
Wounds and Accidents .	48	60	58	68	105	58	49	60	58	63	71	62	760	96·4	
All other causes ...	89	65	75	79	99	89	91	100	84	103	117	75	1,066	137·0	
	611	472	612	657	1,088	894	1,030	1,132	765	840	793	614	9,517		
	Admitted per 1,000 of the Average Strength in each Month.														
	92·3	68·9	83·1	79·7	132·5	109·2	126·7	138·1	93·8	111·3	94·3	82·8	1222·8		

EUROPEAN TROOPS, 1871.

XV.

TABLE *showing the* SICKNESS *and* MORTALITY *among the* EUROPEAN TROOPS *serving in* SOUTHERN INDIA *during the Year* 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																					
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	5,014	300	59·8	15	...	...	...	...	...	2	5	...	...	1	...	3	...	...	1	...	...	...	...	...	1	2
February ...	4,989	302	60·5	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	3
March ...	5,209	251	48·2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
April ...	5,056	243	48·1	5	...	...	...	...	...	...	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	1
May ...	4,967	243	48·9	5	...	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	...	...	...	...	1	...
June ...	4,991	283	56·7	4	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	1	...	...	...	...	...	...
July ...	5,017	303	60·4	9	...	...	...	...	1	...	2	...	1	1	...	...	...	...	...	...	...	...	...	...	2	2
August ...	5,039	292	58·0	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...
September ...	5,022	273	54·4	4	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	...	1	...
October ...	5,056	267	52·8	8	...	...	...	...	...	...	1	...	1	3	...	1	...	1	...	...	...	...	...	...	...	1
November ...	4,479	255	56·9	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	1	...
December ...	3,867	238	61·5	5	...	...	...	...	...	...	...	...	...	...	...	1	...	1	2	...	...	...	...	...	...	1
						...	...	...	1	2	9	1	5	9	...	8	...	2	7	5	...	...	...	...	6	11
						Died per 1,000 of the Average Strength.																				
For the year...	4,892	271	55·4	66	13·49	...	...	·61			1·84	·20	1·02	1·84	...	1·64	...	·41	1·43	1·02	...	...	...	...	1·23	2·25

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	1	...	1	...	2	·4	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	2	...	2	·4	...
Fever, Intermittent ...	27	46	22	20	28	20	10	17	19	19	13	16	257	52·5	...
„ Remittent ...	10	2	...	1	1	2	7	2	...	1	...	...	26	63·4	·97
„ Continued ...	37	27	16	28	32	28	15	28	19	21	15	18	284		
Enteric Fever ...	15	...	...	1	2	2	...	...	...	1	...	4	25	5·1	36·00
Apoplexy ...	2	...	1	1	3	...	...	1	1	...	...	...	9	1·8	11·11
Delirium Tremens ...	4	3	4	5	3	6	9	7	4	3	4	2	54	11·0	9·26
Dysentery ...	12	14	6	9	22	35	29	48	21	32	20	34	282	57·6	3·19
Diarrhœa ...	17	13	22	16	19	22	26	21	12	19	8	16	211	43·1	...
Hepatitis ...	27	14	11	12	17	26	27	28	23	22	27	22	256	52·3	3·13
Spleen Disease ...	1	...	...	2	2	1	1	2	1	2	1	2	15	3·1	...
Respiratory Diseases ...	27	34	40	27	33	28	14	31	25	18	17	21	315	64·4	·63
Phthisis Pulmonalis ...	3	2	2	3	8	5	12	4	5	7	3	8	62	12·7	8·06
Scurvy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism ...	27	10	16	25	23	20	25	22	18	33	18	7	244	49·9	·37
Venereal Diseases ...	78	61	53	56	66	61	53	61	38	55	55	41	678	138·6	
Eye Diseases ...	1	4	6	6	6	6	16	10	5	9	8	4	81	16·6	
Abscess and Ulcer ...	62	50	45	47	80	69	49	72	40	64	38	44	660	135·0	
Wounds and Accidents ...	51	56	52	50	40	48	39	47	35	51	44	64	577	117·9	
All other causes ...	106	72	96	104	123	121	122	132	84	129	73	81	1,243	254·1	
	507	408	392	413	508	500	454	533	351	486	347	384	5,283		
	Admitted per 1,000 of the Average Strength in each Month.														
	101·1	81·8	75·3	81·7	102·3	100·2	90·5	105·8	69·9	96·1	77·5	99·3	1079·9		

EUROPEAN TROOPS, 1871.

XVI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in BURMAH and PEGU during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January	1,563	63	33·9	...	..	..		..	...	...	..	...	..		...	...	...	...		..	. .	..	..	...	...	...
February ..	1,817	74	40·1	3	...	...	...	..	1	...	1	...	..	..	...	...	. .	..	...		...	. .	...	. .	...	1
March .	1,865	85	45·6	2	...	.	...	..	1	...	. .	...	.	...	...	...	..	1	...	..	.	...	. .	...	...	...
April	1,888	89	47·1	3	..	...	...	...	...	.	..	1	.	. .	...	1	...	...	1	. .	...	...	...	...	. .	...
May	1,903	93	48·8	1	..	...	...	...	...	..	..	..	. .	...	..	...	...	...	1	..	...	...	..	...	..	...
June	1,896	103	54·3	2	...	...	...	...	1	...	..	...	..	...	...	..	...	...	...	...	...	.	..	...	1	...
July .	1,874	112	59·8	3	...	...	...	...	...	...	1	. .	...	1	...	...	. .	...	...	1	...	...	..	...	...	..
August	1,890	91	48·1	1	..	...	...	...	...	...	.	...	...	...	...	..	...	...	...	.	...	..	.	...	1	..
September	1,826	91	49·8	...	...	...	...	..	...	...	...	...	.	...	...	. .	...	...	. .	...	...	..	. .	...	...	..
October ...	1,752	81	46·2	3	..	.	. .	...	.	...	..	.	1	...	...	...	.	.	2	..	...	...		...	.	
November .	1,759	74	42·1	2	..	...	...	.	...	.	. .	..		. .	..	1	...	...	...	1	...	...	.	...	...	..
December ...	1,812	69	38·1	1	...	...	..	...		...	...	.	.	...	...	...	...	...	...	...	...	...	...	...	...	1
						...	...	.	3	...	2	1	1	1	..	2	...	1	4	2	..	...		...	2	2
						Died per 1,000 of the Average Strength.																				
For the year .	1,819	84	46·2	21*	11·54	...	...		1·64		1·10	·55	·55	·55	.	1·10	...	·55	2·20	1·10	...	...	.	...	1·10	1·10

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ..		...	...	...	...	...	..	...	...	...	...	...	..	...	...
Smallpox ...	.	...	...	...	...	.	...	...	...	...	.	...	...	...	...
Fever, Intermittent ...	15	18	8	10	19	32	27	19	17	11	8	6	190	104·5	...
„ Remittent ...	..	1	1	...	..	1	...	...	..	..	.	...	3	99·0	1·67
„ Continued ...	15	13	9	13	17	16	12	23	14	15	20	10	177		
Enteric Fever ...	..	2	...	1	...	1	5	...	2	...	.	...	11	6·0	18·88
Apoplexy ..	.	1	..	5	...	...	...	...	...	...	...	.	6	3·3	16·07
Delirium Tremens ...		2	1	1	4	1		1	2	1	1	2	16	8·8	6·25
Dysentery ...	15	11	4	10	20	23	24	11	12	6	12	5	156	85·8	·64
Diarrhœa ...	6	1	11	11	18	19	15	12	6	12	8	8	127	69·8	...
Hepatitis ...	11	6	5	7	18	11	19	15	17	11	11	5	135	74·2	1·48
Spleen Disease ...	..	...	...	1	...	...	..	...	...	...	..	...	1	·6	...
Respiratory Diseases ...	6	3	9	14	7	11	9	14	11	8	5	15	112	61·6	·90
Phthisis Pulmonalis ...	.		2	2	2	1	3	.	...	3	1	1	15	8·2	13·33
Scurvy ...			.	...	.	...	...	...	...	...	1	..	1	·6	...
Rheumatism .	2	10	5	7	12	4	14	9	8	6	6	5	88	48·4	·51
Venereal Diseases ..	17	25	29	35	24	22	19	25	24	25	23	18	286	157·2	
Eye Diseases ..	1	7	...	4	1	1	.	2	1	1	1	..	19	10·4	
Abscess and Ulcer ...	8	13	14	21	19	24	14	16	22	15	10	6	182	100·0	
Wounds and Accidents...	15	24	17	11	27	16	17	17	25	18	19	25	231	127·0	
All other causes ..	11	25	21	31	48	37	60	40	21	30	20	28	379	208·3	
	122	164	136	181	236	220	238	204	182	171	146	132	2,135		
	Admitted per 1,000 of the Average Strength in each Month.														
	78·1	88·8	72·9	97·5	124·0	116·0	127·0	111·5	99·7	97·6	83·0	72·8	1173·7		

---

* Nine men belonging to Regiments serving in Burmah and Pegu died in the Depôt Hospitals at Madras, and six men in the Hospitals of other Regiments or on the march in course of relief. The addition of these deaths raises the death-rate to 19·79 per 1,000.

EUROPEAN TROOPS, 1871.

XVII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN SOLDIERS occupying the HILL STATIONS and HILL CONVALESCENT DEPOTS of the MADRAS and BOMBAY PRESIDENCIES during the Year* 1871, *and the prevalence of the principal Diseases in each Month of the Year.

(The Statistics of Wellington, Ramandroog, Puchmurree (Madras Troops), and Mount Aboo are aggregated in this Statement.)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																					Died out of Hospital.
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Enteric Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	431	22	51·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
February ...	349	19	54·4	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
March ...	710	26	36·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
April ...	994	63	63·4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
May ...	1,063	83	78·1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
June ...	947	79	83·4	2	...	...	...	...	...	...	...		1	1	...	...	...	...	...	...	...	...	...	...	...	...	
July ...	790	58	73·4	1	...	...	...	...	...	...		...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
August ...	757	58	76·6	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	
September ...	744	58	77·9	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
October ...	599	42	70·1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
November ...	423	32	75·7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
December ...	360	28	77·8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
						...	...	...	...	...	1	...	1	5	...	...	...	...	1	...	...	...	...	...	1	1	
						Died per 1,000 of the Average Strength.																					
For the year...	681	47	69·0	10	14·69	...	...				1·47	...	1·47	7·34	...	...	...	...	1·47	...	...	...	...	...	1·47	1·47	

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...		...	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...		...
Fever, Intermittent ...	7	8	28	41	65	48	62	37	20	33	56	52	457	671·1	...
„ Remittent ...	1	...	1	...	3	2	2	...	1	1	...	...	11	32·3	
„ Continued ...	3	2	1	...	1	1	...	...	1	1	1		11		...
Enteric Fever ...	1	...	...	...	...	...	...	...	...	...	...		1	1·4	
Apoplexy ...	...	...	...	...	...	...	...	...	...	...		...		...	
Delirium Tremens ...	...	...	...	...	...	1	...	...	...	1	...		2	2·9	
Dysentery ...	1	1	...	4	11	10	4	5	2	...	1	...	39	57·3	12·82
Diarrhœa ...	...	...	...	6	2	4	5	9	4	3	3	4	40	58·7	...
Hepatitis ...	3	2	3	10	5	7	5	1	4	7	3	1	51	74·9	
Spleen Disease ...	2	1	...	...	...	...	...	1	...	...		...	4	5·9	...
Respiratory Diseases ...	7	3	9	4	10	3	6	7	3	4	...	1	57	83·7	...
Phthisis Pulmonalis ...	1	...	1	1	2	...	...	...	1	...		1	7	10·3	...
Scurvy ...	...	...	...	...	...	...	...	...	...	...	...		...	...	...
Rheumatism ...	2	1	...	7	10	7	8	7	8	7	6	...	63	92·5	...
Venereal Diseases ...	7	2	9	46	17	13	7	18	8	12	3	2	144	211·5	
Eye Diseases ...	1	...	2	5	5	...	...	2	1	...		...	16	23·5	
Abscess and Ulcer ...	2	6	6	15	14	9	4	10	8	7	...	1	82	120·4	
Wounds and Accidents ...	3	2	2	6	11	5	5	2	5	3	3	3	50	73·4	
All other causes ...	30	11	19	43	24	15	18	19	16	23	18	15	251	368·6	
	71	39	81	188	180	125	126	118	82	102	94	80	1,286		
	Admitted per 1,000 of the Average Strength in each Month.														
	164·7	111·8	114·1	189·1	169·3	132·0	159·5	155·9	110·2	170·3	222·2	222·2	1888·4		

EUROPEAN TROOPS, 1871.

XVIII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the various PROVINCES of the BENGAL PRESIDENCY during the Year 1871.

DISEASES.	BENGAL PROPER.			GANGETIC PROVINCES.			ROHILCUND AND MEERUT.			AGRA AND CENTRAL INDIA.			PUNJAB.			HILL STATIONS.			BENGAL PRESIDENCY.		
	Average Strength ... 1,975 Daily Sick-rate per 1,000 ... ... 50·1 Admission-rate per 1,000 ... ... 1291·2 Death-rate per 1,000— A. Cholera ... ·51 B. All Causes ... 15·72			Average Strength ... 8,128 Daily Sick-rate per 1,000 ... ... 62·4 Admission-rate per 1,000 ... ... 1276·8 Death-rate per 1,000— A. Cholera ... 2·83 B. All Causes ... 18·34			Average Strength ... 4,234 Daily Sick-rate per 1,000 ... ... 65·0 Admission-rate per 1,000 ... ... 1659·2 Death-rate per 1,000— A. Cholera ... ... B. All Causes ... 16·53			Average Strength ... 4,120 Daily Sick-rate per 1,000 ... ... 64·6 Admission-rate per 1,000 ... ... 1928·4 Death-rate per 1,000— A. Cholera ... ·24 B. All Causes ... 18·45			Average Strength ... 11,084 Daily Sick-rate per 1,000 ... ... 54·2 Admission-rate per 1,000 ... ... 1594·3 Death-rate per 1,000— A. Cholera ... ... B. All Causes ... 18·13			Average Strength ... 3,652 Daily Sick-rate per 1,000 ... ... 48·5 Admission-rate per 1,000 ... ... 1114·7 Death-rate per 1,000— A. Cholera ... ... B. All Causes ... 9·04			Average Strength ... 35,122 Daily Sick-rate per 1,000 ... ... 59·2 Admission-rate per 1,000 ... ... 1507·7 Death-rate per 1,000— A. Cholera ... ·71 B. All Causes ... 17·83		
	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.
Cholera ...	1·0	50·00	·51	4·7	60·53	2·83	...	...	...	·2	...	·24	...	...	...	...	...	...	1·2	61·00	·71
Smallpox ...	...	...	...	·2	...	...	·5	50·00	·23	...	...	..	·7	...	...	...	...	...	·3	8·33	·03
Enteric Fever ...	4·1	25·00	1·00	5·8	38·30	2·21	4·7	40·00	1·89	1·9	100·00	1·94	4·3	46·81	1·98	·3	..	·27	3·8	44·78	1·71
Intermittent Fevers ...	97·2	...	...	204·2	...	...	419·5	...	...	876·5	...	...	519·6	...	...	241·2	...	...	417·3	...	...
Remittent and Continued Fevers	268·9	...	...	138·1	1·34	1·85	152·1	·78	1·18	187·4	2·72	5·10	247·7	1·09	2·71	32·3	·85	·27	173·2	1·28	2·25
Apoplexy ...	2·0	25·00	·51	1·4	72·73	·99	1·4	16·67	·23	1·2	20·00	·24	2·7	43·33	1·17	·3	...	...	1·8	43·75	·80
Delirium Tremens ...	2·5	20·00	·51	2·7	...	.	3·8	12·50	·47	5·8	...	...	3·7	14·64	·54	2·7	...	...	3·7	6·98	·25
Dysentery ...	47·1	1·08	·51	37·0	5·31	1·97	55·0	2·58	1·42	26·2	3·70	97	27·8	2·27	·63	24·4	5·62	1·37	34·2	3·41	1·17
Diarrhœa ...	62·8	...	...	53·5	·23	·12	78·4	·30	·23	46·4	...	...	58·7	...	...	83·5	·66	·55	64·7	·18	·12
Hepatitis ...	101·3	8·00	5·10	56·7	5·00	2·83	74·4	4·76	3·55	41·7	6·40	2·67	53·4	2·87	1·54	39·7	4·14	1·65	59·7	4·58	2·73
Spleen Diseases ...	7·1	...	...	4·6	...	...	11·6	...	...	13·8	...	...	8·2	1·10	·09	3·6	...	...	8·0	·36	·03
Respiratory Diseases ...	39·0	...	...	52·7	·93	·49	137·5	·34	·47	73·3	·99	·73	89·6	2·62	2·35	102·1	1·61	1·65	85·0	1·61	1·37
Phthisis Pulmonalis ...	6·1	16·67	1·00	8·2	13·43	1·11	12·5	7·55	95	4·9	15·00	73	7·2	30·38	2·17	7·4	11·11	·83	9·0	17·92	1·65
Scurvy ...	...	...	...	·2	...	...	1·0	...	...	·2	...	...	·3	...	...	·3	...	...	·3	8·33	·03
Rheumatism ...	47·1	·70	4·56	53·1	·31	2·22	74·2	·67	4·73	67·0	·67	4·37	63·3	·55	3·15	93·4	·38	2·18	67·7	.52	3·36
Venereal Diseases ...	154·9			287·1			188·9			204·4			172·1			188·4			208·8		
Eye Diseases ...	10·6			35·1			21·5			26·5			23·1			9·9			24·0		
Abscess and Ulcer ...	87·1			95·0			113·8			94·7			75·5			68·7			86·3		
Wounds and Accidents ...	108·3			78·0			98·0			99·0			92·6			89·4			90·6		
All other Causes ...	244·1			158·5			210·4			157·3			143·8			128·1			168·1		
Died out of Hospital ...	...	...	2·02	...	...	1·72	...	...	1·18	...	...	1·46	...	...	1·80	...	...	·27	...	...	1·62
	1291·2	...	15·72	1276·8	...	18·34	1659·2	...	16·53	1928·4	...	18·45	1594·3	...	18·13	1114·7	...	9·04	1507·7	...	17·83

EUROPEAN TROOPS, 1871.

XIX.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the various PROVINCES of the BOMBAY and MADRAS PRESIDENCIES during the Year 1871.

DISEASES.	RAJPOOTANA, MALWA, SCINDE AND ADEN. Average Strength ... 5,620 Daily Sick-rate per 1,000 ... 55·7 Admission-rate per 1,000 ... 1731·9 Death-rate per 1,000— A. Cholera ... ·18 B. All Causes ... 15·30			DECCAN AND NAGPORE. Average Strength ... 7,783 Daily Sick-rate per 1,000 ... 52·9 Admission-rate per 1,000 ... 1222·8 Death-rate per 1,000— A. Cholera ... 4·63 B. All Causes ... 17·73			SOUTHERN INDIA. Average Strength ... 4,892 Daily Sick-rate per 1,000 ... 55·4 Admission-rate per 1,000 ... 1079·9 Death-rate per 1,000— A. Cholera ... ... B. All Causes ... 13·49			BURMAH AND PEGU. Average Strength ... 1,819 Daily Sick-rate per 1,000 ... 46·2 Admission-rate per 1,000 ... 1173·7 Death-rate per 1,000— A. Cholera ... ... B. All Causes ... 11·54*		
	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.
Cholera	·2	...	·15	9·6	46·00	4·63	·4	...	...	...	...	...
Smallpox	...	...	...	·1	...	...	·4	...	...	...	...	...
Enteric Fever	4·3	62·50	2·67	1·5	41·67	·63	5·1	36·00	1·84	6·0	18·18	1·10
Intermittent Fevers ..	624·9	...	...	212·3	...	...	52·5	...	...	104·5	...	...
Remittent and Continued Fevers	126·5	·70	1·07	197·1	·32	·63	63·4	·97	·61	99·0	1·67	1·64
Apoplexy	6·3	36·67	1·96	1·4	45·45	·63	1·8	11·11	·20	3·3	16·67	·55
Delirium Tremens ...	6·6	8·11	·53	6·6	5·88	·39	11·0	9·26	1·02	8·8	6·25	·55
Dysentery	29·5	3·61	1·07	36·0	3·57	1·28	57·6	3·19	1·84	55·8	·84	·55
Diarrhœa	79·0	·45	·36	51·5	·25	·13	43·1	...	...	69·8	.	...
Hepatitis	52·7	2·70	1·42	37·6	9·22	3·47	52·3	3·13	1·64	74·2	1·48	1·10
Spleen Disease ...	6·8	...	...	3·9	...	...	3·1	...	...	·6	.	...
Respiratory Diseases .	71·0	·50	·36	50·3	·77	39	64·4	·63	·41	61·6	·90	·55
Phthisis Pulmonalis ...	5·9	21·21	1·24	6·3	11·11	·78	12·7	8·06	1·02	8·2	13·33	1·10
Scurvy . ..	·4	..	·18	·3	...	...	...	...	...	·6	...	...
Rheumatism ..	72·4	·37	2·66	15·2	·58	3·35	49·9	·37	2·68	48·4	·51	3·30
Venereal Diseases ..	[illegible]			[illegible]			138·6			157·2		
Eye Diseases	29·5			21·1			16·6			10·4		
Abscess and Ulcer ...	105·9			91·7			135·0			130·0		
Wounds and Accidents ..	96·9			96·4			117·9			127·0		
All other Causes ...	214·1			137·0			254·1			208·3		
Died out of Hospital ...	...	...	1·60	...	...	1·42	..	...	2·25	...	...	1·10
	1731·9	...	15·30	1222·8	...	17·73	1079·9	...	13·49	1173·7	...	11·54*

DISEASES.	MADRAS PRESIDENCY. Average Strength ... 10,944 Daily Sick-rate per 1,000 ... 57·5 Admission-rate per 1,000 ... 1193·2 Death-rate per 1,000— A. Cholera ... 3·32 B. All Causes ... 20·10			BOMBAY PRESIDENCY. Average Strength ... 10,540 Daily Sick-rate per 1,000 ... 54·6 Admission-rate per 1,000 ... 1517·6 Death-rate per 1,000— A. Cholera ... ·09 B. All Causes ... 14·02			ARMY OF INDIA. Average Strength ... 56,806 Daily Sick-rate per 1,000 ... 57·9 Admission-rate per 1,000 ... 1449·6 Death-rate per 1,000— A. Cholera ... 1·09 B. All Causes ... 17·53		
	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.	Admitted per 1,000.	Died in each hundred treated.	Died per 1,000.
Cholera	7·0	47·37	3·32	·2	50·0	·09	2·1	52·10	1·09
Smallpox	·3	...	...	...	..	...	·3	6·67	·02
Enteric Fever	4·7	31·25	1·47	2·3	64·00	1·48	3·6	43·96	1·62
Intermittent Fevers ..	99·7	...	...	510·3	..	...	372·7	...	...
Remittent and Continued Fevers	76·4	1·09	·83	181·3	·46	1·01	156·3	1·08	1·71
Apoplexy	2·2	25·00	·55	3·4	35·13	1·20	2·2	37·60	·83
Delirium Tremens ...	8·7	7·45	·65	6·2	[illegible]	·55	5·1	7·59	·39
Dysentery	73·0	3·16	2·31	23·2	3·50	·82	39·5	3·34	1·34
Diarrhœa	60·4	...	...	59·2	·47	·28	62·8	·20	·12
Hepatitis	66·5	5·27	3·50	44·5	4·15	1·85	58·1	4·67	2·73
Spleen Disease ...	3·0	...	...	5·7	...	..	6·6	·27	·02
Respiratory Diseases .	62·4	·74	·46	60·9	·45	·28	76·1	1·30	·99
Phthisis Pulmonalis ...	12·2	9·85	1·20	9·2	16·00	1·48	9·7	15·64	1·53
Scurvy . ..	·3	...	...	·5	20·00	·09	·3	10·00	·03
Rheumatism ..	55·7	·47	3·51	58·1	·54	3·41	63·2	·51	3·39
Venereal Diseases ..	150·3			171·1			196·8		
Eye Diseases	17·4			26·9			23·3		
Abscess and Ulcer ...	122·4			93·1			94·5		
Wounds and Accidents ..	111·0			90·2			95·0		
All other Causes ...	235·9			166·7			151·4		
Died out of Hospital ...	...	...	2·21	..	.	1·38	...	...	1·60
	1193·2	...	20·10	1517·6	...	14·02	1449·6	...	17·53

---

* See note to Table XVI.

EUROPEAN TROOPS. 1871.

XX.

TABLE showing the GENERAL STATISTICS of SICKNESS and MORTALITY in the PRINCIPAL MILITARY STATIONS of the THREE PRESIDENCIES.

STATIONS.	Period of Observation.	Average Strength during the period of occupation.	Daily Sick per 1,000 of the Average Strength in each Month.												Average Daily Sick per 1,000 of Strength for the period of occupation.	Admission-rate per 1,000 of Strength for the period of occupation.	Died per 1,000 of the Average Strength.			
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A. Cholera.	B. All other Causes. 1. In Hospital.	B. All other Causes. 2. Out of Hospital.	C. All Causes.
Bengal Proper.																				
Fort William	For the Year	800	66·8	69·2	51·7	53·0	53·3	55·6	62·6	66·0	75·2	60·0	81·1	77·8	62·5	1230·0	...	10·00		10·00
Dum-Dum	„	672	35·8	37·7	27·3	28·9	32·1	39·9	36·1	23·0	26·1	29·3	34·3	44·9	32·7	1050·6	1·49	14·88	2·98	19·35
Barrackpore	„	504	42·7	49·0	48·7	49·3	47·5	50·1	53·8	63·3	61·9	61·5	63·5	33·0	51·6	1706·4	..	27·78	3·97	31·75
Gangetic Provinces.																				
Hazareebaugh	„	887	59·8	65·4	64·9	84·1	71·9	56·4	62·5	55·9	48·1	49·3	64·3	54·0	60·9	1384·4	..	15·78	1·13	16·91
Dinapore	„	891	73·0	74·9	61·0	49·3	64·9	74·2	73·3	78·0	72·4	73·6	54·7	63·9	67·0	1144·2	5·68	17·02	3·41	26·11
Benares	„	514	69·6	61·7	63·2	41·6	45·6	63·6	53·6	68·4	62·9	55·8	42·5	53·0	56·4	1262·6	5·84	19·45	1·95	27·24
Chunar	„	65	75·8	30·3	50·8	49·2	29·9	59·7	45·5	45·5	59·7	14·9	30·3	30·3	46·2	1923·1	...	...	...	...
Fyzabad	„	930	31·7	47·5	59·5	63·5	71·1	78·6	76·6	67·2	64·0	58·2	39·3	40·8	58·1	840·7	...	11·83	1·07	12·90
Lucknow	„	2,425	40·1	44·2	43·1	46·7	54·5	55·4	51·2	63·6	75·5	52·8	69·1	45·9	56·1	1094·4	3·30	12·37	1·65	17·32
Seetapore	„	613	15·9	32·5	33·8	36·2	47·3	42·6	37·9	31·6	38·2	35·0	27·2	23·6	34·3	809·1	...	11·42	1·63	13·05
Futtehghur	„	177	83·9	51·6	50·8	25·8	30·9	56·7	51·5	82·5	77·3	41·2	63·2	54·3	56·5	1350·3	..	16·95	..	16·95
Cawnpore	„	537	74·5	89·4	95·8	105·9	105·9	111·5	128·0	143·0	135·5	103·1	99·1	112·6	107·5	2175·0	...	9·56	3·58	13·14
Allahabad	„	797	54·7	66·1	57·7	62·7	65·9	67·8	73·6	69·1	59·9	57·8	51·1	69·5	62·7	1673·8	8·78	17·57	...	26·35
Rohilcund and Meerut.																				
Shahjehanpore	„	403	88·6	91·1	81·9	90·2	85·0	115·3	107·1	71·4	61·2	61·5	49·5	41·1	76·9	2178·6	...	14·89	...	14·89
Bareilly	„	803	50·1	56·6	55·4	33·0	47·4	45·3	46·7	49·2	57·6	50·3	54·6	54·1	49·8	794·5	..	8·72	2·49	11·21
Moradabad	„	181	79·8	112·7	132·1	22·9	28·6	28·6	22·9	40·0	28·6	34·3	32·3	19·4	49·7	1066·3	...	5·52	...	5·52
Roorkee	„	367	35·6	39·8	48·0	59·9	64·4	62·5	53·0	72·1	75·7	63·5	60·3	57·8	54·5	1700·2	...	8·17	...	8·17
Meerut	„	1,644	45·4	58·0	64·2	58·8	67·4	68·3	79·7	102·8	111·8	102·0	86·6	69·1	76·0	1995·1	...	21·29	1·22	22·51
Delhi	„	418	59·3	56·9	70·2	67·3	81·7	79·7	60·5	79·9	92·5	79·7	61·1	69·7	69·4	2019·1	...	16·75	2·39	19·14
Muttra	„	418	61·9	64·2	55·0	41·3	38·9	31·7	31·7	36·6	51·3	51·7	50·0	35·4	45·5	1358·9	...	14·35	...	14·35
Agra and Central India.																				
Agra	„	997	52·2	37·9	47·4	49·4	60·2	59·0	62·0	74·6	63·6	58·3	43·9	50·9	55·2	1390·1	...	23·07	2·01	25·08
Morar	„	1,075	55·0	58·5	75·4	81·4	76·6	89·2	96·2	105·5	100·9	94·8	89·8	79·3	83·7	2300·0	...	14·88	1·86	16·74
Gwalior Citadel	„	310	70·4	49·4	35·9	28·3	36·2	36·2	42·8	62·3	53·0	47·0	39·5	44·4	45·2	1316·1	...	9·67	3·23	12·90
Jhansi	„	473	71·7	57·2	60·5	42·7	38·6	53·8	67·3	83·0	108·1	132·9	132·4	88·4	76·1	3042·3	2·11	16·92	...	19·03
Nowgong	„	304	54·8	71·0	53·0	56·3	70·0	83·6	66·9	70·2	98·0	105·1	81·0	57·9	72·4	2118·4	...	26·31	...	26·31
Saugor	„	635	38·9	38·2	26·5	36·8	44·5	44·3	44·4	65·8	52·8	88·1	102·2	42·4	52·0	1718·1	...	9·45	...	9·45
Jubbulpore	„	326	51·7	6·9	26·1	46·1	46·1	36·3	48·5	58·8	72·4	75·3	56·0	48·8	52·1	1360·4	...	15·33	3·07	18·40
Punjab.																				
Umballa	„	1,177	31·9	45·8	42·6	34·7	47·6	50·0	47·3	61·4	61·9	53·6	41·3	28·4	45·9	1234·5	...	11·99	3·40	15·29
Jullundur	„	702	90·2	72·[illegible]	76·2	61·5	48·6	50·3	55·9	84·3	75·2	65·2	46·9	32·8	64·1	1142·5	.	14·25	1·42	15·67
Ferozepore	„	1,077	29·7	40·9	38·6	35·6	41·4	39·5	38·7	44·5	42·6	38·9	35·9	36·1	38·1	1052·6	...	10·21	·93	11·14
Mooltan	„	843	39·2	37·5	30·2	35·2	45·1	50·2	57·8	46·9	36·0	37·3	32·1	37·3	40·3	1019·0	...	15·98	1·19	20·17
Dera Ismael Khan	„	100	20·0	20·0	20·0	10·0	39·6	69·3	49·5	59·4	49·5	49·5	30·6	20·0	40·0	1250·0	...	...	...	...
Sealkote	„	1,089	32·2	34·9	47·1	36·2	41·1	44·2	49·3	65·7	64·9	64·9	55·5	51·5	48·7	1154·2	..	14·70	1·83	16·53
Umritsur	„	161	79·4	73·8	22·1	47·6	55·6	47·6	48·3	44·3	59·4	62·5	90·4	24·4	55·9	1776·4	...	24·84	...	24·84
Fort Lahore	„	83	24·4	24·1	24·1	48·8	61·0	36·6	73·2	60·2	24·1	35·7	36·6	36·6	36·1	1987·9	...	38·14	12·05	45·18
Meean Meer	„	907	49·5	62·7	57·3	68·9	68·8	72·2	77·0	87·9	90·9	75·6	65·8	59·7	68·4	1455·3	...	14·33	3·31	17·64
Rawulpindee	„	1,413	41·5	50·4	50·1	57·5	55·2	61·1	68·0	75·3	71·1	55·0	72·9	53·4	57·3	1591·8	...	11·32	·71	12·03
Campbellpore	9 Months, April to December	153	...	...	..	64·7	98·7	121·0	118·0	112·5	75·5	55·9	52·3	53·4	85·0	2745·1	..	6·54	...	6·54
Attock	For the Year	166	92·6	50·3	50·6	36·4	55·9	99·4	68·3	56·3	18·8	43·2	47·6	51·1	54·2	1843·3	..	6·03	6·02	12·05
Nowshera	„	536	92·7	67·3	48·4	51·9	69·4	91·8	73·2	92·4	81·8	77·6	39·0	60·2	72·8	3395·5	..	27·98	1·87	29·85
Peshawur and Cherat*	„	1,550	74·8	64·4	57·2	50·7	73·8	80·3	93·6	71·2	62·2	57·4	64·0	54·1	65·8	2242·6	..	21·59	·54	22·13

HILL STATIONS.																				
Darjeeling	..	66	35·1		31·7	28·2	58·0	59·7	14·7	44·1	58·8	73·5	58·8	58·0	45·5	1121·2	...	...	..	..
Raneekhet	..	375	41·3	72·5	62·8	111·7	97·8	108·9	137·3	87·3	74·2	96·1	70·2	65·8	80·7	1816·0	...	24·00		24·00
Chuckrata	..	774	21·0	37·3	40·9	32·7	25·7	30·4	28·1	32·8	35·3	28·3	17·7	105·5	32·3	732·5	...	5·17	1·29	6·45
Dugshaie	"	917	57·5	60·0	57·6	72·8	65·1	63·0	56·1	52·9	47·0	15·3	39·3	38·2	54·5	1256·3	...	5·45	...	5·45
Subathoo	"	771	29·2	49·1	49·9	67·2	48·5	62·9	67·9	41·1	36·3	25·0	25·5	29·5	44·1	920·9	...	10·38	...	10·38
Jutogh	10 Months, January to October	88	23·5	22·7	44·9	45·5	45·5	44·9	33·7	22·5	56·2	11·2	..	...	34·1	511·4	...	...	...	...
Dhurmsalla	7 Months, April to October	112	...	...	...	53·6	71·4	53·6	44·6	26·8	53·6	35·7	...	..	44·6	1053·6	...	...	...	...
Chumba Hills	6 Months, May to October	577	...	...	...	..	46·3	46·6	55·5	43·5	43·5	36·5	..	..	45·1	......	...	3·47	...	3·47
Murree Hills	6 Months, May to October	550	.	..	..	...	31·6	34·0	34·0	38·2	38·9	3[illegible]·3	..	.	34·5	......	..	3·64	..	3·64
CONVALESCENT DEPÔTS.																				
Darjeeling	7 Months, May to November	115	...	...	...	..	113·0	130·4	139·1	78·3	78·3	105·3	70·2	.	104·3	1156·5	..	26·09	...	26·09
Nynee Tal	10 Months, January and April to December.	241	32·9		..	116·1	131·3	150·6	162·2	158·3	131·3	121·1	105·0	109·6	120·3	2298·7	...	12·45	...	12·45
Landour	7 Months, April to October	217		..	..	65·7	111·1	118·7	109·6	108·6	104·1	71·4	...	.	98·8	1050·7	..	9·22	...	9·22
Kussowlie	7 Months, April to October	637	.	...	...	61·9	69·7	64·3	69·8	71·4	66·7	59·2	..		65·9	916·8	...	12·56	1·57	14·13
Dalhousie	7 Months, April to October	394	.	.	..	117·8	130·3	120·9	121·2	108·6	105·9	107·2	...		116·7	1261·4	...	17·76	2·54	20·30
Murree	6 Months, May to October	584	...	.	.	..	73·6	71·2	76·6	76·9	71·0	68·4	...	..	71·9	739·7	...	8·56	..	8·56
RAJPOOTANA, MALWA, SCINDE, AND ADEN.																				
Nusseerabad	For the Year	720	74·8	73·6	86·5	93·2	97·8	101·0	101·0	117·8	117·4	116·6	108·5	61·7	95·8	2677·8	..	15·28	2·75	18·06
Neemuch	"	458	65·3	52·0	70·7	60·8	58·6	62·6	62·6	72·7	101·6	126·0	118·5	71·0	78·6	1934·5	..	13·10	2·18	15·28
Indore	..	118	21·1	24·2	16·3	24·4	24·4	24·4	16·1	24·2	40·0	72·6	75·6	43·5	33·9	1008·0	..	8·48	8·47	16·95
Mhow	..	1,413	53·8	52·3	42·5	41·5	50·6	56·5	65·0	59·5	62·3	54·8	53·7	46·2	53·1	1883·9	·71	9·20	..	9·91
Deesa	..	843	45·2	60·2	73·9	71·4	52·7	57·2	41·9	48·1	43·2	41·4	38·0	29·4	49·8	1296·6	.	20·17	2·37	22·54
Ahmedabad and Baroda	..	273	69·9	55·7	42·3	31·4	52·8	60·7	63·8	46·3	47·1	57·8	66·9	71·0	54·9	2274·7	...	25·64		25·64
Kurrachee and Ghizree	..	789	39·6	47·5	61·5	66·2	47·3	63·8	53·0	45·6	39·2	34·7	44·0	38·3	48·2	1693·3	...	13·95	2·53	16·48
Hyderabad	..	290	38·9	24·8	40·3	47·6	56·2	61·3	31·0	26·7	34·1	33·0	14·4	23·0	37·9	1182·7	...	10·34	3·45	13·79
Aden	..	716	30·1	27·7	27·7	30·3	33·3	37·6	43·1	50·1	37·6	22·3	23·7	25·7	32·1	1041·9	..	9·78	..	9·78
DECCAN AND NAGPORE																				
Bombay	..	463	73·8	60·8	52·9	59·8	78·1	89·3	60·1	46·7	49·9	36·5	29·6	24·6	56·2	1246·2	.	10·80	...	10·80
Asseerghur	..	125	82·0	77·6	62·5	48·9	47·6	32·5	16·4	16·5	49·6	50·0	33·3	29·1	40·0	1152·0	..	8·00	...	8·00
Ahmednuggur	..	642	33·3	26·9	29·1	33·8	18·4	33·5	53·6	81·3	78·2	84·6	70·5	69·3	51·4	1302·2	.	7·79	..	7·79
Poona and Kirkee	..	2,228	44·8	40·4	41·5	36·2	53·0	36·3	74·2	61·9	45·1	43·8	51·7	42·3	50·3	1213·8	.	8·98	·45	9·43
Sattara	..	159	26·2	36·6	47·1	63·2	75·7	131·1	152·2	97·8	65·2	54·9	48·1	4·7	63·5	2386·8	...	21·17	10·58	31·75
Belgaum	..	668	30·4	47·4	48·0	51·6	46·5	42·6	47·5	45·6	43·7	44·7	35·0	34·3	44·1	766·5	...	7·01	...	7·01
Secunderabad	..	2,121	30·5	36·5	44·6	48·9	54·7	59·0	56·7	56·1	64·8	66·6	70·9	67·0	55·6	1264·5	16·97	19·81	3·30	40·08
Kamptee	..	1,025	55·2	66·3	69·2	66·1	68·2	66·3	60·0	64·0	57·1	78·1	47·7	54·7	60·8	1331·4	..	6·56	·98	7·54
SOUTHERN INDIA																				
Bellary	..	902	61·8	63·5	42·6	46·8	42·8	51·4	62·1	61·6	55·4	51·2	52·8	97·9	54·3	874·7	...	6·65	1·11	7·76
Bangalore	..	1,562	49·6	52·5	49·9	54·2	49·1	55·4	54·8	51·4	52·5	53·4	56·1	63·0	53·1	1230·5	...	7·68	2·56	10·24
Cannanore	..	828	49·6	40·6	32·5	32·5	43·4	67·6	73·9	66·6	65·8	51·1	55·6	60·8	51·9	1119·5				
Malliapoorum	..	96	102·0	81·6	61·9	41·2	42·1	63·2	84·2	63·8	63·8	53·2	63·8	38·5	62·5	1239·6	...	21·95	...	21·95
Calicut	..	78	27·0	29·0	14·5	25·3	50·0	75·0	62·5	50·0	38·5	64·1	51·3	44·0	51·3	871·8				
Trichinopoly	.	290	101·1	95·7	88·7	69·1	47·1	51·5	47·6	44·0	62·5	62·0	72·5	44·9	64·3	1114·3		17·86	3·57	21·43
St. Thomas Mount	..	397	96·6	102·1	52·8	52·5	38·3	35·7	43·0	52·9	56·9	57·6	46·6	57·8	55·4	944·9	...	15·11	5·04	20·15
Madras		751	59·5	63·5	53·1	51·1	70·8	65·2	67·5	67·9	52·8	51·9	63·1	66·7	61·3	1000·0		5·32	4·00	9·32
BURMAH AND PEGU																				
Rangoon	..	392	26·4	34·9	46·9	49·2	45·9	46·1	51·2	45·6	47·1	37·3	39·9	33·4	41·7	992·4	..	10·10	..	10·10
Toungoo	.	375	52·8	45·7	44·0	43·1	44·4	52·6	56·0	37·6	32·3	40·2	41·5	38·9	42·7	1194·7	..	8·00	...	8·00
Thayetmyo	.	542	34·1	46·8	42·9	47·0	53·1	61·9	72·1	61·3	69·0	61·7	44·7	48·2	53·5	1412·8	..	11·07	3·69	14·76
Port Blair	..	110	18·2	18·2	55·0	36·7	64·5	73·4	82·6	64·2	27·3	50·0	36·4	18·5	45·5	1081·8	..	18·18		18·18
HILL STATIONS AND DEPÔTS.																				
Mount Aboo	...	135		70·2	43·5	84·3	112·9	83·3	112·0	114·3	147·1	100·0	148·1	97·6	88·9	3074·1	.	22·22	..	22·22
Poorundhur	...	53	83·3	41·7	66·7	64·1	61·2	105·3	...	76·9	230·8	129·0	92·0	92·4	75·5	3330·6	.	...		
Ramandroog	.	55	37·0	38·4	41·7	41·2	51·5	13·7	39·2	.	...	...		..	36·4	727·3	.			..
Wellington	.	354	66·7	58·2	36·4	65·1	62·8	79·2	62·8	56·9	55·4	55·6	41·5	60·0	62·3	1195·5	..	8·50	2·83	11·33

* The Statistics of Cherat for the season of occupation are shown in Section 7 of the Regimental Table.

EUROPEAN TROOPS, 1871.

XXI.

TABLE showing the RATIO in which the PRINCIPAL DISEASES have contributed to make up the ADMISSION-RATE of the YEAR in the CHIEF MILITARY STATIONS of the THREE PRESIDENCIES.

STATIONS.	Average Strength during the period of occupation.	Admitted into Hospital per 1,000 of Average Strength.											Admitted per 1,000 of the Average Strength from all Causes.
		Cholera.	Heat Apoplexy.	Fevers.	Dysentery.	Diarrhœa.	Hepatitis.	Rheumatism.	Venereal Diseases.	Diseases of the Respiratory Organs.	Ophthalmia.	All other causes.	
Bengal Proper.													
Fort William	800	...	...	300·0	38·8	38·8	97·5	38·7	206·2	45·0	16·2	448·8	1230·0
Dum-Dum	672	3·0	4·5	449·4	19·3	25·3	29·8	35·7	135·4	46·2	4·5	303·5	1050·6
Barrackpore	504	...	2·0	375·0	97·2	150·8	202·4	75·4	99·2	27·8	9·9	660·7	1700·4
Gangetic Provinces.													
Hazareebaugh	887	1·1	1·1	358·5	25·9	50·7	27·1	38·4	384·5	75·5	75·5	346·1	1384·4
Dinapore	881	7·9	1·1	122·6	67·0	69·2	115·8	60·2	320·1	61·3	48·8	270·2	1144·2
Benares	514	5·8	3·9	184·8	29·2	81·7	70·0	58·4	321·0	85·6	38·9	383·3	1262·6
Chunar	65	...	...	630·8	61·5	30·8	61·5	46·1	338·5	107·7	15·4	630·8	1923·1
Fyzabad	930	...	2·2	219·3	30·1	18·3	39·8	71·0	209·7	40·9	23·6	225·8	880·7
Lucknow	2,425	7·8	1·2	219·0	27·2	56·9	48·3	40·0	206·4	40·8	29·7	357·1	1004·4
Seetapore	613	...	1·6	145·2	50·6	11·4	37·5	57·1	133·8	40·8	21·2	309·9	809·1
Futtehghur	177	...	...	372·9	50·9	62·1	22·6	56·5	214·7	113·0	16·9	440·7	1350·3
Cawnpore	837	1·2	...	859·0	55·0	55·0	98·0	56·1	500·6	44·2	41·8	467·1	2178·0
Allahabad	797	8·8	1·3	824·3	25·1	82·8	40·2	70·3	179·4	46·4	11·3	383·9	1673·8
Rohilcund and Meerut.													
Shahjehanpore	403	..	2·5	734·5	7·4	166·2	30·7	139·0	265·5	218·4	49·6	555·8	2178·6
Bareilly	803	...	...	186·8	26·1	12·4	72·2	18·7	198·0	37·4	10·0	232·9	794·5
Moradabad	181	...	...	342·5	38·7	11·1	55·3	49·7	259·7	5·5	27·6	276·2	1066·3
Roorkee	367	...	2·7	517·7	103·5	70·8	117·2	70·8	177·1	139·0	40·9	460·5	1700·2
Meerut	1,614	..	2·4	775·6	82·1	101·0	90·6	82·1	125·3	217·8	17·0	501·2	1995·1
Delhi	418	...	...	839·7	62·2	110·0	19·1	71·8	308·6	55·0	12·0	540·7	2019·1
Muttra	418	...	...	277·5	7·2	35·9	74·2	102·9	208·1	74·2	23·9	555·0	1358·9
Agra and Central India													
Agra	997	...	2·0	537·6	13·0	78·2	29·1	55·2	206·8	44·1	37·1	317·0	1380·1
Morar	1,075	...	1·8	1380·8	56·7	34·4	39·1	70·7	174·9	107·0	24·2	461·4	2360·0
Gwalior Citadel	310	..	3·2	561·3	45·2	61·3	41·9	87·1	87·1	41·9	25·8	361·3	1316·1
Jhansi	473	2·1	...	2154·3	10·6	42·3	23·3	67·6	209·3	118·4	29·6	384·8	3042·3
Nowgong	304	...	...	1118·4	9·9	46·1	72·4	141·4	236·8	75·6	46·1	371·7	2118·4
Saugor	635	...	...	965·4	11·0	12·6	74·0	52·0	149·6	67·7	11·0	374·8	1718·1
Jubbulpore	326	..	...	659·5	15·3	46·0	21·6	30·7	291·4	24·6	9·2	279·1	1380·4
Punjab.													
Umballa	1,177	...	1·7	467·3	32·3	56·1	38·2	63·7	162·3	52·7	29·7	330·5	1234·5
Jullundur	702	...	...	401·7	14·2	45·6	61·3	79·8	123·9	85·5	34·2	296·3	1142·5
Ferozepore	1,077	...	...	365·8	28·8	53·9	13·0	19·5	219·1	53·9	37·1	290·6	1082·6
Mooltan	813	...	3·6	323·8	36·8	15·4	73·5	53·4	104·4	111·5	19·0	277·6	1019·0
Dera Ismael Khan	100	...	...	550·0	30·0	30·0	...	100·0	150·0	60·0	30·0	300·0	1250·0
Sealkote	1,089	...	·9	423·3	19·3	36·7	60·8	68·0	163·5	42·2	22·0	308·5	1154·2
Umritsur	161	...	6·2	701·8	43·5	37·3	31·0	49·7	546·6	37·3	...	323·0	1776·4
Fort Lahore	83	...	12·0	722·9	144·6	108·4	96·4	48·2	108·4	156·6	48·2	542·2	1987·9
Meean Meer	907	...	6·6	438·8	24·3	45·2	80·5	105·8	183·0	108·0	33·1	430·0	1455·3
Rawulpindee	1,413	...	·7	950·5	16·3	48·1	75·0	76·4	207·4	89·9	13·4	324·1	1801·8
Campbellpore (9 months)	153	...	13·1	1784·3	...	19·6	98·0	130·7	45·8	85·0	39·2	529·4	2745·1
Attock	166	...	12·0	1120·5	24·1	60·2	12·0	66·3	216·9	36·1	6·0	289·2	1843·3
Nowshera	536	...	9·3	2591·4	9·3	48·5	26·1	69·0	166·0	166·1	7·5	302·3	3395·5
Peshawur and Cherat	1,550	...	3·2	1394·8	29·7	66·5	54·8	44·5	123·9	129·0	10·4	376·8	2242·6
Hill Stations.													
Darjeeling	66	...	...	121·2	...	75·8	75·8	60·6	303·0	30·3	...	454·5	1121·2
Raneekhet	375	...	...	229·3	50·7	253·3	90·7	104·7	288·0	181·3	29·3	498·7	1816·0
Chuckrata	774	...	...	93·0	18·1	41·3	18·1	58·1	103·4	126·6	5·2	208·7	732·5
Dugshaie	917	...	...	350·6	16·4	87·1	3·3	148·5	285·7	118·9	8·7	281·3	1256·3
Subathoo	771	..	...	220·5	28·5	92·1	71·3	[illegible]	133·6	55·8	3·9	207·2	929·9
Jutogh (10 months)	88	...	...	113·6	...	11·4	34·1	34·1	45·5	11·4	...	261·3	511·4
Dhurmsalla	112	...	8·9	348·2	8·9	133·9	26·8	62·5	107·2	44·7	35·7	276·8	1053·6
Chumba Hills (6 months)	577	...	...	154·3	17·3	67·6	17·3	29·5	64·1	26·0	6·9	145·6	528·6
Murree Hills (6 months)	550	..	...	202·7	12·7	23·6	27·3	32·7	83·6	54·6	8·7	100·0	630·9

STATIONS.	Average Strength during the period of occupation.	Admitted into Hospital per 1,000 of Average Strength.											Admitted per 1,000 of the Average Strength from all Causes.
		Cholera.	Heat Apoplexy.	Fevers.	Dysentery.	Diarrhœa.	Hepatitis.	Rheumatism.	Venereal Diseases.	Diseases of the Respiratory Organs.	Ophthalmia.	All other Causes.	
CONVALESCENT DEPÔTS.													
Darjeeling Depôt (7 months) ...	115	...	...	260·9	17·4	34·8	113·0	95·6	60·0	156·5	17·4	400·0	1156·5
Nynee Tal Depôt (10 months) ...	241	..	4·2	647·3	62·2	95·4	161·8	128·6	311·2	161·8	37·4	688·8	2298·7
Landour Depôt (7 months) ...	217	...	4·6	262·7	41·5	36·9	133·6	50·7	230·4	64·5	9·2	216·6	1050·7
Kussowlie Depôt (7 months) ...	637	...	...	292·0	4·7	98·9	62·8	70·6	95·1	64·4	9·4	318·2	916·8
Dalhousie Depôt (7 months) ...	394	...	...	398·5	17·8	165·0	63·4	71·1	96·4	88·8	12·7	347·7	1261·4
Murree Depôt (6 months) ...	584	..	...	299·7	10·3	49·6	41·1	32·5	118·1	36·0	1·7	150·7	739·7
RAJPOOTANA, MALWA, SCINDE, AND ADEN.													
Nusseerabad ..	720	...	4·2	1231·9	40·3	87·5	113·9	136·1	270·8	106·9	54·2	632·0	2677·8
Neemuch ..	458	..	6·6	921·4	37·1	61·1	67·7	78·6	364·6	56·8	15·3	325·3	1934·5
Indore .	118	...	...	322·0	...	33·9	25·4	25·4	347·5	25·4	...	220·4	1000·0
Mhow	1,413	·7	·7	1053·8	17·7	74·3	30·4	70·1	236·4	62·3	30·4	307·1	1883·9
Deesa	843	...	20·2	453·1	20·2	31·4	77·1	38·0	188·6	124·5	20·2	320·3	1293·6
Ahmedabad and Baroda .	273	...	...	882·8	7·3	146·5	40·3	109·9	80·6	69·6	25·6	912·1	2274·7
Kurrachee and Ghizree	789	...	...	711·0	41·8	167·3	21·5	50·7	138·2	55·8	49·4	457·6	1693·3
Hyderabad ...	290	...	6·9	434·5	34·5	48·3	24·1	41·4	203·4	51·7	31·0	306·9	1182·7
Aden .	716	...	5·6	141·1	46·1	40·5	51·7	79·6	60·0	30·7	7·0	579·6	1041·9
DECCAN AND NAGPORE.													
Bombay ..	463	...	...	321·8	15·1	32·4	79·9	45·4	129·6	64·8	15·1	542·1	1246·2
Asseerghur	125	...	...	304·0	48·0	40·0	56·0	16·0	168·0	40·0	24·0	456·0	1152·0
Ahmednuggur .	642	...	3·1	813·1	...	10·9	53·0	17·1	124·6	23·4	14·0	243·0	1302·2
Poona and Kirkee . .	2,226	...	1·3	673·0	13·5	35·5	10·3	32·3	111·0	45·8	32·8	258·3	1213·8
Sattara ..	189	5·3	...	1746·0	5·3	21·1	10·6	74·1	58·2	111·1	15·9	349·2	2396·8
Belgaum .	998	...	1·0	169·3	8·0	36·1	25·0	46·1	236·5	32·1	19·0	193·4	766·5
Secunderabad .	2,121	34·9	1·9	162·2	95·7	104·7	67·4	60·3	220·2	51·8	15·6	449·8	1264·5
Kamptee ..	1,020	...	1·0	374·5	24·5	32·4	21·6	56·9	273·5	74·5	42·1	130·4	1331·4
SOUTHERN INDIA.													
Bellary	902	...	...	79·8	16·6	49·9	44·3	76·5	126·1	52·1	18·9	410·2	874·7
Bangalore	1,562	·6	1·3	101·2	27·5	33·3	44·8	62·7	168·4	92·8	28·2	669·7	1230·5
Cannanore	828	1·2	1·2	222·2	198·1	68·8	37·5	20·5	109·9	30·2	3·6	426·3	1119·5
Malliapoorum	96	...	...	250·0	218·7	62·5	104·2	41·7	52·1	52·1	...	458·3	1239·6
Calicut ..	78	...	25·6	89·8	51·3	...	51·3	...	76·9	...	25·6	551·3	871·8
Trichinopoly ..	280	...	3·6	253·6	50·0	32·1	57·1	39·3	107·1	50·0	3·6	517·9	1114·3
St. Thomas Mount ...	397	...	5·0	35·3	27·7	37·8	138·5	57·9	123·4	80·6	20·2	468·5	994·9
Madras .	751	...	1·3	82·6	13·3	38·0	39·9	29·3	159·8	62·6	8·0	567·2	1000·0
BURMAH AND PEGU													
Rangoon ...	792	...	2·5	189·4	127·5	55·6	40·4	29·0	203·3	42·9	2·5	299·3	992·4
Toungoo .	375	...	8·0	242·7	34·7	93·3	48·0	50·7	82·7	48·0	29·3	557·3	1194·7
Thayetmyoo .	542	...	1·8	232·5	72·0	88·6	134·7	77·5	153·1	86·7	7·4	588·5	1442·8
Port Blair ...	110	...	...	127·3	27·3	...	109·1	36·3	100·0	118·2	18·2	545·4	1081·8
HILL STATIONS AND DEPÔTS.													
Mount Aboo ..	135	...	...	1792·6	51·9	81·5	133·3	51·9	266·7	111·1	44·4	540·7	3074·1
Poorandhur .	53	...	...	1717·0	56·6	113·2	75·5	150·9	18·9	94·3	56·6	1056·6	3339·6
Ramandroog	55	...	...	236·4	...	18·2	18·2	18·2	36·4	18·2	18·2	363·5	727·3
Wellington	353	...	...	161·4	48·2	17·0	68·0	87·8	158·6	96·4	17·0	541·1	1195·5

EUROPEAN TROOPS, 1871.

XXII.

TABLE showing the MORTALITY in each STATION, the CAUSES of DEATH, and the RATIO of DEATHS to STRENGTH.

STATIONS.	Average Strength.	Causes of Deaths.																				Died out of Hospital.	Total Deaths.	Died per 1,000 of Strength.			
		Cholera.	Smallpox.	Typhoid Fever.	Intermittent Fever.	Remittent Fever.	Continued Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Diseases.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.			A. Cholera.	B All other Causes.		C. All Causes.
																									1. In Hospital.	2. Out of Hospital.	
Deolalee Depôt (Bengal Troops)	...							1				1			1	5					2	2	12	...	...	...	...
Poona and Bombay Depôts (Bengal Troops)	...																					1	*1	...	...	...	...
Troops on march, Bengal & N. W. P.	...			1		2	1	1						1	1	1						2	10	...	...	...	...
Recruits, Invalids, &c., „	...									1		2			2	2							7	...	...	...	...
Fort William	800											5			1	1					1	...	8	..	10·00	...	10·00
Dum-Dum	672	1		1				1	1			3			2						2	2	13	1·49	14·88	2·98	19·35
Barrackpore	504			1						1		8			2	1			1			2	16	...	27·78	3·97	31·75
	1,976	1		2				1	1	1		16			5	2			1		3	4	37	·51	16·19	2·02	18·72
Hazareebaugh	887			4		1	2	1		3		1				1					1	1	15	...	15·78	1·13	16·91
Dinapore	881	5		1				1		4		8			1							3	23	5·68	17·02	3·41	26·11
Benares	514	3				3		2				2			2						1	1	14	5·84	19·45	1·95	27·24
Chunar	65																						None.	...	...	...	...
Fyzabad	930			1				2		1		1		1	2	1				1	1	1	12	...	11·83	1·07	12·90
Lucknow	2,425	8		7		4	1	1		2		6		1	1	5			1	1		4	42	3·30	12·37	1·65	17·32
Seetapore	613			1		1		1		1		2									1	1	8	...	11·42	1·63	13·05
Futteghur	177													1							2		3	...	16·95	...	16·95
Cawnpore	837			2						4		1				1						3	11	...	9·56	3·58	13·14
Allahabad	797	7		2		2	1			1	1	2		1	2	1					1	...	21	8·78	17·57	...	26·35
	8,126	23		18		11	4	8		16	1	23		4	8	9			1	2	7	14	149	2·83	13·79	1·72	18·34
Shahjehanpore	403			1		1					1	2				1							6	...	14·89	...	14·89
Bareilly	803														4	1					2	2	9	...	8·72	2·49	11·21
Moradabad	181														1								1	...	5·52	...	5·52
Roorkee	367			1								2											3	...	8·17	...	8·17
Meerut	1,644		1	6		1	1		1	6		7		2	2	2					6	2	37	...	21·29	1·22	22·51
Delhi	418					2		1				2									2	1	8	...	16·75	2·39	19·14
Muttra	418								1			2			1						2		6	...	14·35	...	14·35
	4,234		1	8		4	1	1	2	6	1	15		2	8	4					12	5	70	...	15·35	1·18	16·53
Agra	997			7		6	4	1		1		2			2							2	25	...	23·07	2·01	25·08
Morar	1,075					6						4		1	3						2	2	18	...	14·88	1·86	16·74
Gwalior Citadel	310											1				1					1	1	4	...	9·67	3·23	12·90
Jhansi	473	1								2		1			3					1	1		9	2·11	16·92	...	19·03
Nowgong	304			1		1						2		1	1	1					1		8	...	26·31	...	26·31
Saugor	635					2				1		1				1					1		6		9·45		9·45
Jubbulpore	326					2								1							2	1	6	...	15·33	3·07	18·40
	4,120	1		8		17	4	1		4		11		3	9	3				1	8	6	76	·24	16·75	1·46	18·45
Umballa	1,177			3				2	1			2	1		1	4						4	18	...	11·89	3·40	15·29
Jullundur	702					3				1		2		1	1	1					1	1	11	...	14·25	1·42	15·67
Ferozepore	1,077			1					2	1				1	2	2					2	1	12	...	10·21	·93	11·14
Mooltan	843					2		1	1			2		1	2	3			1		3	1	17	..	18·98	1·19	20·17
Dera Ismael Khan	100																					...	None.	...	...	...	...
Sealkote	1,089			2		4		1		2		2		1	2						2	2	18	...	14·70	1·83	16·53
Umritsur	161			1		2		1															4	.	24·84	...	24·84
Fort Lahore	83							1	1												1	1	4	...	36·14	12·05	48·19
Meean Meer	907					1		3		1		3			2	1					2	3	16	...	14·33	3·31	17·64
Rawulpindee	1,413			2			2					2		1	1	5					3	1	17	...	11·32	·71	12·03
Campbellpore (9 months)	153											1										...	1	...	6·54	...	6·54
Attock	166							1														1	2	...	6·03	6·02	12·05
Nowshera	536					3		2						4	1	2					3	1	16	...	27·98	1·87	29·85
Peshawur	1,853			6		10						2		2	4	5					1	1	31	...	21·59	·54	22·13
Cherat				5		2				1		1		1									10				
Troops on march, Punjab	...			1				1	1					14								2	19	..	...	...	...
Recruits, Invalids, &c., Punjab	..			1			1			1						1						1	5	...	...	...	...
	11,081			22		27	3	13	6	7		17	1	26	16	24			1		18	20	201	...	16·33	1·80	18·13
Puchmurree (Bengal Troops, 4 months)	100											1				1							2	...	20·00	...	20·00
Darjeeling	68																					...	None.	...	..	...	..
Raneekhet	375									3	1	2		1	1					1		...	9	...	24·00	...	24·00
Chuckrata	774													1	2						1	1	5	...	5·17	1·29	6·46
Dugshaie	917													3	1			1				...	5	...	5·45	...	5·45
Subathoo	771			1						2	1	2			1	1						...	8	...	10·38	...	10·38
Jutogh (10 months)	88																					...	None.	...	...	...	...
Dhurmsalla (7 months)	112																					...	None.	...	...	...	...
Chumba Hills (6 months)	577					1										1							2	...	3·47	...	3·47
Murree Hills (6 months)	550											1		1								...	2	...	3·64	...	3·64
AS FOR 12 MONTHS	3,652			1		1				5	2	6		6	5	3		1		1	1	1	33	...	8·77	·27	9·04
Darjeeling Depôt (7 months)	115									1				1		1						...	3	..	26·09	...	26·09
Nynee Tal Depôt (10 months)	241							1								2						...	3	...	12·45	...	12·45
Landour Depôt (7 months)	217											1			1							...	2	...	9·22	..	9·22
Kussowlie Depôt (7 months)	637					2		1				1		3	1							1	9	...	12·56	1·57	14·13
Dalhousie Depôt (7 months)	394											2		1	1	1			1		1	1	8	..	17·76	2·54	20·30
Murree Depôt (6 months)	584					2						1		1		1						...	5	..	8·56	...	8·56
FOR SEASON OF OCCUPATION	2,275					4		2		1		5		6	3	5			1		1	2	30	...	11·87	·88	12·75

STATIONS.	Average Strength.	Causes of Deaths.																						Died per 1,000 of Strength.			
		Cholera.	Smallpox.	Typhoid Fever.	Intermittent Fever.	Remittent Fever.	Continued Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.	Total Deaths.	A. Cholera.	B. All other Causes.		C. All Causes.
																									1. In Hospital.	2. Out of Hospital.	
On the march, Bombay Presidency, &c.	..					1				1		2			1	1					...	3	9	.	...	...	
Deolalee Depôt, Bombay Troops ...	.											1				1					2	.	4	..	...	...	
Poona Depôt, " ...	.															1					2	.	3				
Colaba Depôt, " ...	.													...		2							2		...		.
On the march, Madras Presidency	..											3			1						1	2	7	...	...	.	...
Poonamallee and Presidency Depôts	...						1			2		3			4	4					1	...	15	...	..	...	...
Deolalee Depôt, Madras Troops ...	...					1						1			1							...	3		.	...	...
Poona and Bombay Depôts " ..	...							1		1		4											6		.	...	..
Nusseerabad ...	720			5	1			2			1	1									1	2	13	...	15·28	2·78	18·06
Neemuch ...	458			3		1	1		1													1	7	.	13·10	2.18	15·28
Indore ..	118																	1				1	2		8·48	8·47	16·95
Mhow ...	1,413	1		2		2		1		2		2		1						1	2	..	14	·71	9·20	..	9·91
Deesa ...	813							4	1	1	1	3			1	4					2	2	19	.	20·17	2·37	22·54
Ahmedabad and Baroda ..	273			2		1		1						1	2							.	7	...	25·64	..	25·64
Kurrachee and Ghizree ..	780			3				1	1	1		1			1	2					1	2	13	...	13·95	2·53	16·48
Hyderabad .	290							1							1						1	1	4		10·34	3·45	13·79
Aden .	716							1		2		1			2	1						..	7	...	9·78	...	9·78
	5,620	1	.	16	1	4	1	11	3	6	2	8		2	7	7	...	1		1	7	9	86	·18	13·52	1·60	15·30
Bombay ...	463					1						1								1	2	...	5	.	10·80	..	10·80
Asseerghur ..	125															1						...	1	.	8·00	..	8·00
Ahmednuggur ..	642						1	1	1		1	1									.		5	..	7·79	...	7·79
Poona and Kirkee ...	2,226						2	1		1		4			6	2				1	3	1	21	.	8·98	·45	9·43
Sattara ...	189			1					1					1							1	2	6		21·17	10·58	·31·75
Belgaum ..	998											3	...			1					3	...	7		7·01	.	7·01
Secunderabad ...	2,121	36	...	4				2		9		17	...	2	3	2					3	7	85	16·97	19·81	3·30	40·08
Kamptee ...	1,020					1		1	1			1									3	1	8		6·86	·98	7·84
	7,783	36	...	5	..	2	3	5	3	10	1	27		3	9	6				2	15	11	138	4·63	11·68	1·42	17·73
Bellary .	902			1								1		1		1					2	1	7	..	6·65	1.11	7·76
Bangalore ...	1,562			2					2			2			3	2					1	4	16	...	7·68	2·56	10·24
Cannanore ...	828			3			1		2	5		1		1		1							14	..	21·95	...	21·95
Malliapoorum ...	96			2		1									1								4				
Calicut ...	78			1			1			1					1							...	4				
Trichinopoly ...	280							1		1		2			1						...	1	6	..	17·86	3·57	21·43
St, Thomas Mount ...	397									2		1				1					2	2	8	...	15·11	5·04	20·15
Madras .	751								1			1			1						1	3	7		5·32	4·00	9·32
	4,892	..	...	9		1	2	1	5	9		8		2	7	5	...	...		...	6	11	66		11·24	2·25	13·49
Rangoon ...	702			2						1		1			2	2						.	8	...	10·10	.	10·10
Toungoo ..	375					2									1							.	3	.	8·00	...	8·00
Thayetmyoo ..	542							1	1			...		1	1						2	2	8	...	11·07	3·69	14·76
Port Blair ...	110					1						1										...	2	...	18·18	...	18·18
	1,819	...	...	2		3	.	1	1	1		2	.	1	4	2					2	2	21	.	10·44	1·10	11·54
Taraghur, Ajmere (7 months) ..	42																						None	...	...	...	...
Mount Aboo .	135								1	2												..	3	.	22·22	...	22·22
Poorundhur .	53																					.	None	.	...	...	...
Puchmurree (Madras Troops, 7 months) .	99									2											1	.	3	...	30·30	...	30·30
Ramandroog ..	55																						None	...	...	...	...
Wellington	353			1						1					1							1	4	..	8·50	2·83	11·33
As for the Year ..	681	..	...	1					1	5					1						1	1	10	...	13·22	1·47	14·69

ARMIES.	Average Strength.	Causes of Deaths.																						Died per 1,000 of Strength.			
		Cholera.	Smallpox.	Typhoid Fever.	Intermittent Fever.	Remittent Fever.	Continued Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.	Total Deaths.	A. Cholera.	B. All other Causes.		C. All Causes.
																									1. In Hospital.	2. Out of Hospital.	
Army of Bengal	35,122	25	1	60	...	66	13	28	9	41	4	96	1	48	58	58	...	1	4	4	52	57	626	·71	15·50	1·62	17·83
Army of Madras .	10,844	36	...	16	...	6	3	6	7	25	..	30	.	5	21	13	..	.	...	...	17	24	218	3·32	14·57	2·21	20·10
Army of Bombay ...	10,840	1	...	16	1	6	4	13	6	10	3	20	.	3	14	16	...	1	...	3	20	15	152	·09	12·55	1·38	14·02
Army of India ..	56,806	62	1	92	1	78	20	47	22	76	7	155	1	56	93	87	...	2	4	7	89	96	996	1·09	14·75	1·60	17·53

EUROPEAN TROOPS, 1871.

XXIII.

TABLE showing the PREVALENC of CHOLERA in each MONTH and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Deolalee Depôt (Bengal Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts (Bengal Troops) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Bengal and N. W. P. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Recruits, Invalids, &c., „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William ...	800	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum ...	672	...	...	...	...	...	1	...	...	...	...	...	1	2	...	1	...
Barrackpore ...	504	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,976	...	...	...	...	...	1	...	...	...	...	...	1	2	1·0	1	·51
Hazareebaugh ...	887	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Dinapore ...	881	...	...	...	...	...	...	...	...	...	...	6	1	7	...	5	...
Benares ...	514	...	...	...	...	...	...	1	1	1	...	...	...	3	...	3	...
Chunar ...	65	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	930	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow ...	2,425	...	...	...	...	...	1	...	1	...	...	17	...	19	...	8	...
Seetapore ...	613	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futteghur ...	177	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore ...	837	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Allahabad ...	797	...	...	2	3	1	1	...	...	...	...	...	...	7	...	7	...
	8,126	...	...	3	3	1	2	2	2	1	...	23	1	38	4·7	23	2·83
Shahjehanpore ..	403	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly ..	803	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad ...	181	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	367	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	1,044	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Delhi ...	418	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra ...	418	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,234	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra ...	907	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar ...	1,075	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel ...	310	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	473	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...
Nowgong	304	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor ...	635	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore ...	326	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,120	...	...	...	...	...	...	...	...	1	...	...	...	1	·2	1	·24
Umballa ...	1,177	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ...	702	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore ...	1,077	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan ..	843	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan ...	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote ...	1,089	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur ...	161	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore ...	83	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer ...	907	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindee ...	1,413	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore (9 months) ...	153	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock ...	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera ...	536	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ... Cherat ..	1,853	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Punjab ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Recruits, Invalids, &c., Punjab	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	11,084	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Bengal Troops, 4 months) ..	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling ...	66	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet ...	375	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata ...	774	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshaie ...	917	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo ...	771	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jutogh (10 months) ...	88	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla (7 months) ..	112	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumba Hills (6 months) ...	577	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills (6 months) ...	550	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE FOR 12 MONTHS ...	3,652	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling Depôt (7 months) ...	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal „ (10 months) ...	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour „ (7 months) ...	217	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie „ (7 months) ...	637	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie „ (7 months) ...	394	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree „ (6 months) ..	584	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
FOR THE SEASON OF OCCUPATION.	2,275	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

STATIONS.	Average Strength for the period of occupation.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
On the march, Bombay Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona " " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba " " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
On the march, Madras Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt (Madras Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts (Madras Troops) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	720	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neemuch ...	458	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indore ...	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow ...	1,413	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Deesa ...	843	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda ...	273	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree ...	789	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad ...	290	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden ...	716	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5,620	...	...	...	...	...	1	...	...	...	...	...	...	1	·2	1	·18
Bombay ...	463	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur ...	125	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	642	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Kirkee ...	2,226	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Sattara ...	189	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum ...	998	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad ...	2,121	...	...	...	...	71	2	1	...	...	...	...	...	74	..	36	...
Kamptee ...	1,020	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	7,783	...	...	...	...	71	2	1	...	1	...	...	...	75	9·6	36	4·63
Bellary ...	902	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore ...	1,562	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Cannanore ...	828	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...
Malliapoorum ..	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut ...	78	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly ...	280	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas Mount ...	397	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras ...	751	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,893	...	...	...	...	...	...	...	...	1	...	1	...	2	·4	...	.
Rangoon ...	792	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungoo ...	375	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyoo ...	542	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,819	...	...	...	...	...	...	...	...	.	...	.		...	.	..	..
Taraghur, Ajmere (8 months)	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo ...	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ..	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Madras Troops, 7 months) ...	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ..	353	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE FOR THE YEAR ...	681	...	...	...	...	...	...	.	...	...	...	...	...	...	..	..	..

ARMIES.	Average Strength.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Army of Bengal	35,122	...	...	3	3	1	3	2	2	2	...	23	2	41	1·2	25	·71
Army of Madras	10,844	...	...	...	...	71	2	1	...	1	...	1	...	76	7·0	36	3·32
Army of Bombay	10,840	...	...	..	...	...	1	...	...	1	...	...	...	2	·2	1	·09
Army of India	56,806	...	...	3	3	72	6	3	2	4	...	24	2	119	2·1	62	1·09

EUROPEAN TROOPS, 1871.

XXIV.

TABLE showing the PREVALENCE of FEVER in each MONTH and the DISTRIBUTION of FEVERS by STATIONS and PROVINCES.

(Excluding Enteric Fever, which is shown separately in the following Table).

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month. Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admissions of the Year.	Admission-rate per 1,000 of Strength.*	Number of Deaths.	Death-rate per 1,000 of Strength.
Presidency Depôt ...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt (Bengal Troops)	...	6	11	12	5	..	...	...	...	...	...	3	7	44	...	...	...
Poona and Bombay Depôts (Bengal Troops) ..	..	...	...	...	...	...	...	1	3	...	...	...	...	4	...	...	...
Troops on march, Bengal and N. W. P. ..	...	4	1	1	16	...	...	...	...	..	...	19	6	47	..	3	...
Recruits, Invalids, &c., „	...	8	1	8	2	...	...	...	...	...	...	...	4	23	...	...	
Fort William .	880	26	18	8	12	12	8	15	15	24	18	41	37	234	...	...	...
Dum-Dum .	672	19	8	21	12	18	36	46	28	21	51	32	9	301	...	...	...
Barrackpore ..	504	4	12	10	21	44	15	8	21	18	16	9	10	188	...	...	...
	1,975	49	38	39	45	74	59	69	64	63	85	82	56	723	366·1	...	...
Hazareebaugh ...	887	9	14	31	43	26	21	18	25	18	44	20	21	209	...	3	...
Dinapore .	881	10	6	7	10	9	9	4	14	5	13	12	8	107	...	...	...
Benares .	514	4	3	3	9	5	10	10	12	16	13	9	1	95	...	3	...
Chunar ...	65	7	6	5	5	2	1	...	3	3	5	2	2	41	...	...	...
Fyzabad .	930	11	20	15	26	32	21	11	20	9	11	16	10	202	..	...	...
Lucknow ...	2,425	27	18	25	42	33	37	59	99	74	57	25	19	515	...	5	...
Seetapore ..	613	4	5	9	7	12	5	9	6	13	9	3	6	88	..	1	...
Futtehghur ..	177	5	5	2	1	6	6	3	5	12	10	8	3	66	..	...	...
Cawnpore ...	837	29	16	19	31	48	48	89	101	144	136	42	14	717	...	...	...
Allahabad	797	25	52	34	37	54	71	92	76	56	100	23	31	651	..	3	..
	8,126	131	145	150	211	227	229	295	361	350	398	169	115	2,781	342·3	15	1·85
Shahjehanpore	403	37	38	35	27	57	37	30	12	6	5	4	2	290	...	1	...
Bareilly .	803	19	21	10	13	20	6	6	21	12	16	4	1	149	...	...	...
Moradabad .	181	16	17	10	1	1	1	2	2	2	2	6	2	62	..	...	...
Roorkee .	367	10	8	13	6	18	10	19	37	33	21	8	6	189	...	..	..
Meerut .	1,644	20	14	26	27	59	69	125	281	220	250	119	57	1,267	...	2	...
Delhi ...	418	11	5	7	12	40	38	22	81	55	40	10	12	351	..	2	...
Muttra	418	3	12	7	11	13	9	5	11	8	22	7	4	112	...	..	...
	4,234	116	115	108	97	217	170	209	445	336	356	167	84	2,420	571·6	5	1·18
Agra .	997	10	10	22	72	73	37	58	130	63	31	13	12	531	...	10	...
Morar .	1,075	72	72	76	119	112	96	151	183	103	225	150	135	1,494	..	6	..
Gwalior Citadel ..	310	15	8	8	6	18	12	14	25	23	22	12	9	172	..	...	...
Jhansi ..	473	24	11	20	21	28	18	23	80	154	262	223	155	1,019	...	..	...
Nowgong .	304	16	12	7	9	12	12	23	47	64	68	45	24	330	...	1	...
Saugor ..	635	35	18	11	19	31	20	25	103	123	108	37	23	613	...	2	.
Jubbulpore .	326	40	7	2	4	6	10	29	22	18	55	10	12	215	...	2	..
	4,120	212	138	146	250	280	205	323	590	548	831	490	370	4,383	1063·9	21	5·10
Umballa	1,177	13	12	16	43	57	38	37	108	100	88	25	8	545	...	.	...
Jullundur ..	702	60	38	35	24	24	18	21	19	16	7	4	7	282	.	3	.
Ferozepore ..	1,077	7	7	17	74	71	56	29	58	33	14	17	9	392	.	..	...
Mooltan ..	843	11	14	10	15	42	59	45	35	15	12	14	1	273	...	2	...
Dera Ismael Khan	100	1	...	...	1	10	9	4	20	4	3	3	...	55	...	.	...
Sealkote ..	1,089	21	16	20	37	48	45	60	66	53	37	23	32	458	.	4	...
Umritsur	161	5	5	5	7	8	7	11	28	20	6	2	8	111	...	2	..
Fort Lahore	83	1	3	4	5	12	..	13	13	4	1	2	2	60	...	...	...
Meean Meer	907	13	24	18	26	43	34	67	106	31	15	9	10	396	...	1	...
Rawulpindee ..	1,413	72	59	74	125	180	196	131	188	101	128	74	43	1,341	...	2	..
Campbellpore (9 months) ...	153	...	...	...	24	51	38	40	49	36	22	5	8	273		..	...
Attock ..	166	36	21	16	7	27	20	15	14	2	7	15	7	186	..	...	...
Nowshera ...	536	229	121	101	106	109	173	156	161	65	75	2	...	1,888	.	3	...
Peshawur .	1,853	265	180	179	107	426	250	109	117	61	162	178	113	2,147	...	10	...
Cherat .		...	...	...	...	...	...	88	79	58	33	4	...	262	...	2	...
Troops on march, Punjab ...	...	71	...	...	11	.	...	...	...	..	9	118	87	296	...	..	..
Recruits, Invalids, &c., Punjab...	...	17	5	10	...	...	...	..	..	...	2	6	...	40	...	1	...
	11,084	831	505	504	612	1,198	913	826	1,061	509	620	501	335	8,505	707·3	30	2·71
Puchmurree (Bengal Troops, 4 months)	100	...	...	2	1	9	20	2	4	...	...	.	...	38	...	..	...
Darjeeling .	66	...	...	1	...	1	1	1	1	...	...	2	1	8	...	..	...
Raneekhet ..	375	2	...	1	12	25	17	10	5	4	6	1	3	86	...	...	...
Chuckrata ..	774	5	4	...	...	6	4	10	13	9	16	1	4	72	...	...	...
Dugshaie .	917	38	21	14	19	52	29	42	46	22	28	11	5	327	...	...	...
Subathoo	771	2	19	17	13	19	28	16	26	14	8	1	6	169	...	...	...
Jutogh (10 months) ..	88	...	...	3	3	1	...	...	...	1	2	...	...	10	...	...	
Dhurmsalla (7 months) .	112	...	...	...	9	12	9	1	3	4	1	...	...	39	...		...
Chumba Hills (6 months) ..	577	...	...	...	...	12	17	16	23	13	6	2	...	89	.	1	...
Murree Hills (6 months) .	550	...	...	...	...	40	30	34	26	10	6	..	...	161	...	...	..
AVERAGE FOR 12 MONTHS ..	3,652	47	44	38	57	186	161	132	147	77	73	18	19	999	273·5	1	·27
Darjeeling Depôt (7 months) ..	116	..	..	4	5	9	3	5	2	6	4	1	...	39	...	...	...
Nynee Tal „ (10 months) ...	241	3	...	...	18	28	23	20	27	19	11	2	3	154	...	...	...
Landour „ (7 months) ...	217	...	..	...	8	18	16	9	6	...	...	...	...	57	...	...	...
Kussowlie „ (7 months) ...	637	...	...	5	30	28	23	29	32	33	11	8	3	202	...	2	...
Dalhousie „ (7 months) ...	394	...	..	...	30	35	34	15	22	10	11	4	...	161	...	...	...
Murree „ (6 months) ...	584	...	...	...	22	39	42	23	35	25	11	2	...	190	...	2	...
FOR THE SEASON OF OCCUPATION	2,275	3	...	9	113	157	141	101	124	93	48	17	6	812	341·6	4	1·76

* For the Admission-rate of each Station, see Table XXI.

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
On the march, Bombay Presidency ...	...	20	8	2	...	...	...	...	...	...	...	6	25	61	...	1	...
Deolalee Depôt, Bombay Troops	...	2	5	1	1	...	...	2	...	...	3	3	2	19	...	...	...
Poona " " ...	...	8	...	3	1	1	29	28	21	10	2	3	...	106	...	...	...
Colaba " " ...	...	1	1	...	...	1	3	...	...	...	...	5	4	15	...	...	...
On the march, Madras Presidency	...	4	8	...	...	...	...	...	...	...	...	6	7	25	...	...	...
Poonamallee and Presidency Depôts ...	...	5	2	1	3	2	...	1	...	...	...	1	...	15	...	1	...
Deolalee Depôt, Madras Troops	...	...	...	...	3	...	...	...	...	...	...	...	...	3	...	1	...
Poona and Bombay Depôts (Madras Troops) ..	...	2	...	1	...	...	...	1	1	...	...	...	2	7	...		...
Nusseerabad ..	720	75	49	69	67	96	62	74	123	116	96	37	17	881	...	1	...
Neemuch ...	458	26	7	4	7	19	35	29	48	55	110	58	17	415	...	2	...
Indore	118	3	4	...	1	3	2	...	7	6	6	2	4	38	...	...	...
Mhow ..	1,413	117	84	104	98	172	123	113	156	163	207	87	61	1,485	...	2	...
Deesa ..	843	23	18	79	58	11	8	23	36	28	66	20	12	382	...	...	...
Ahmedabad and Baroda .	273	32	12	12	11	21	16	18	19	14	34	24	26	239	...	1	...
Kurrachee and Ghizree .	789	35	27	70	61	58	55	44	55	33	42	46	30	556	...	...	...
Hyderabad	290	26	9	10	14	7	8	4	3	13	15	13	4	126	...	...	...
Aden ...	716	2	3	2	5	37	20	16	3	3	...	4	6	101	...	...	...
	5,620	339	213	350	322	424	329	321	450	431	576	291	177	4,223	751·4	6	1·07
Bombay	463	17	10	12	9	12	11	8	26	14	12	7	11	149	...	1	...
Asseerghur	126	2	4	4	2	2	2	1	5	4	7	4	1	38	...	...	...
Ahmednuggur .	642	12	9	9	8	9	39	63	92	63	100	66	52	522	...	1	...
Poona and Kirkee ..	2,226	22	22	26	32	221	252	389	194	88	93	123	36	1,498	...	2	...
Sattara ..	180	4	6	13	29	53	79	58	41	16	18	11	1	329	...	...	...
Belgaum	998	38	13	13	10	20	17	13	16	9	3	8	9	169	...	...	...
Secunderabad ...	2,121	10	15	41	34	44	14	21	27	33	39	20	27	334	...	...	...
Kamptee ...	1,020	34	30	17	23	35	22	25	93	52	15	9	26	381	...	1	...
	7,783	139	109	135	147	396	436	578	404	279	287	257	163	3,420	439·4	5	·63
Bellary	902	12	12	5	5	3	9	4	5	7	6	2	1	71	...	...	...
Bangalore	1,562	19	26	9	15	21	12	5	11	12	9	6	8	153	...		...
Cannanore	828	13	11	8	17	19	19	11	18	11	14	12	15	168	...	1	...
Malliapoorum .	96	10	2	...	...	1	1	6	1	...	...	1	...	22	...	1	...
Calicut ...	78	3	1	...	...	...	...	...	...	...	...	...	2	6		1	...
Trichinopoly ..	280	10	12	12	5	5	4	2	4	5	5	5	2	71	...	...	...
St. Thomas Mount .	397	2	1	2	...	1	3	2	...	1	...	1	1	14	...	...	...
Madras	751	5	10	2	7	11	2	2	8	2	7	1	5	62	...	...	...
	4,892	74	75	38	40	61	50	32	47	38	41	28	34	567	115·9	3	·61
Rangoon .	792	11	16	5	10	13	28	15	8	13	8	8	6	140	...	...	...
Toungoo .	375	8	5	5	5	6	7	7	16	4	10	15	3	91	...	2	...
Thayetmyoo ...	542	11	11	6	8	17	12	12	16	13	8	5	7	126	...		...
Port Blair ..	110	...	1	2	...	...	2	5	2	1	...	...	...	13		1	...
	1,819	30	32	18	23	36	49	39	42	31	26	28	16	370	203·5	3	1·64
Taraghur, Ajmere (8 months) ...	90	...	...	...	3	7	3	3	8	7	3	1		35	...	...	...
Mount Aboo	135	1	5	12	13	35	27	5	11	8	17	37	24	242	...	...	...
Poorundhur ...	53	3	...	13	9	11	...	...	...	1	11	15	28	91	...		...
Puchmurree (Madras Troops, 7 months)	90	...	...	...	10	5	14	4	8	1	...	...	...	42	...	...	...
Ramandroog .	55	2	3	3	2	...	1	1	...	...	...	1	...	13	...		...
Wellington ...	363	5	2	2	4	11	6	4	10	5	4	3		56		...	
AVERAGE FOR THE YEAR	681	11	10	30	41	69	51	64	37	22	35	57	52	479	703·4		...

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Army of Bengal ...	35,122	1,409	998	1,015	1,408	2,339	1,878	1,956	2,705	2,006	2,411	1,466	1,001	20,742	590·5	79	2·25
Army of Madras	10,844	166	167	121	151	194	156	128	228	160	125	105	112	1,813	167·1	9	·83
Army of Bombay	10,840	469	206	458	439	796	791	938	864	651	845	580	370	7,497	691·6	11	1·01
Army of India	56,806	2,044	1,461	1,594	1,998	3,329	2,825	3,022	3,887	2,877	3,381	2,151	1,483	30,052	529·0	99	1·74

EUROPEAN TROOPS, 1871.

XXV.

TABLE showing the PREVALENCE of ENTERIC FEVER in each MONTH and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Deolalee Depot (Bengal Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôt (Bengal Troops) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Bengal and N. W. P. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Recruits, Invalids, &c., „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William ...	880	2	4	...	...	...	...	...	...	...	...	...	...	6	...	...	...
Dum-Dum ...	672	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Barrackpore ...	504	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
	1,976	2	4	1	...	...	...	1	...	...	...	...	...	8	4·1	2	1·00
Hazareebaugh ...	887	4	1	...	...	2	5	3	2	...	...	2	...	19	...	4	...
Dinapore	881	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Benares ...	514	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chunar ...	65	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	930	...	...	...	...	2	...	...	...	...	...	...	...	2	...	1	...
Lucknow ...	2,425	5	1	2	3	1	2	...	1	...	...	1	...	16	...	7	...
Seetapore ...	613	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...
Futtehghur ...	177	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	837	...	...	...	1	...	...	...	...	1	...	...	...	2	...	2	...
Allahabad ...	797	...	...	...	...	...	...	...	...	1	...	...	5	6	...	2	...
	8,126	9	3	2	4	5	7	3	4	2	...	3	5	47	5·8	18	2·21
Shahjehanpore	403	3	2	...	...	...	...	...	...	...	1	...	...	6	...	1	...
Bareilly	803	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Moradabad ...	181	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	367	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...
Meerut	1,844	...	...	...	...	2	...	1	...	...	4	1	...	8	...	6	...
Delhi ...	418	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra ...	418	...	...	...	...	1	1	...	2	...	...	...	...	4	...	...	...
	4,234	3	2	...	...	5	1	1	2	...	5	1	...	20	4·7	8	1·89
Agra	997	...	1	1	...	...	...	...	1	...	...	1	1	5	...	7*	...
Morar	1,075	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel	310	...	...	...	...	...	1	...	...	1	...	...	...	2	...	...	...
Jhansi	473	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	304	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...
Saugor	635	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	326	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,120	...	1	1	...	...	1	...	1	2	...	1	1	8	1·9	8	1·94
Umballa	1,177	...	...	...	...	1	...	...	2	1	1	...	...	5	...	3	...
Jullundur	702	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore	1,077	1	1	...	...	...	...	...	...	...	...	...	...	2	...	1	...
Mooltan	843	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan ...	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	1,080	1	...	...	1	...	...	...	...	1	...	...	...	3	...	2	...
Umritsur ...	161	...	1	...	...	...	...	...	1	...	...	...	...	2	...	1	...
Fort Lahore	83	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	907	...	...	...	...	...	...	...	...	...	1	1	...	2	...	...	...
Rawulpindee	1,413	...	...	1	...	...	...	...	1	...	...	...	...	2	...	2	...
Campbellpore (9 months)	153	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock ...	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera ...	536	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Peshawur	1,853	1	...	1	1	1	4	2	1	3	...	1	...	15	...	6	...
Cherat ...		...	...	...	...	...	...	3	2	7	1	...	...	13	...	5	...
Troops on march, Punjab	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...
Recruits, Invalids, &c., Punjab	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
	11,084	3	3	2	2	2	4	5	7	12	3	3	1	47	4·3	22	1·98
Puchmurree (Bengal Troops, 4 months)	160	...	...	...	...		...	...	...	...	...	...	...	...	...	...	...
Darjeeling ...	66	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet ...	375	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata	774	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshaie ...	917	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo ...	771	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Jutogh (10 months) ...	88	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla (7 months) ...	112	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumba Hills (6 months) ...	577	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills (6 months) ...	550	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE FOR 12 MONTHS ...	3,652	...	...	...	...	...	1	...	...	...	...	...	...	1	·3	1	·27
Darjeeling Depôt (7 months) ...	115	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Nynee Tal „ (10 months) ...	241	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...
Landour „ (7 months) ...	217	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie „ (7 months) ...	637	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie „ (7 months) ...	394	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree „ (6 months) ...	584		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
FOR THE SEASON OF OCCUPATION	2,275	...	...	...	2	...	...	...	...	1	...	...	...	3	1·3	...	...

* Several cases of the Enteric Fever were not shown as admitted.

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
On the march, Bombay Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona Depôt, "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt, "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
On the march, Madras Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts, Madras Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	720	1	...	...	...	...	...	...	...	3	2	...	...	6	...	5	...
Neemuch ...	458	...	...	...	1	...	...	...	1	2	...	...	3	7	...	3	...
Indore ...	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow ...	1,413	...	...	...	...	...	...	...	...	1	3	...	...	4	...	2	...
Deesa ...	843	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda ...	273	1	...	...	...	...	1	...	...	...	...	...	...	2	...	2	...
Kurrachee and Ghizree ...	789	...	1	1	1	1	...	1	...	...	...	...	...	5	...	3	...
Hyderabad ...	290	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden ...	710	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5,020	2	1	1	2	1	1	1	1	6	5	...	3	24	4·3	15	2·67
Bombay ...	463	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur ...	125	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	642	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Kirkee ...	2,226	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sattara ...	180	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Belgaum ...	998	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad ...	2,121	...	...	...	...	1	...	...	1	6	1	...	1	10	...	4	...
Kamptee ...	1,020	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
	7,783	...	...	1	...	1	...	...	1	7	1	...	1	12	1·5	5	·63
Bellary ...	902	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...
Bangalore ...	1,562	...	...	...	...	1	2	...	...	...	...	...	2	5	...	2	...
Cannanore ...	828	12	...	...	1	1	...	...	...	...	...	...	2	16	...	3	...
Malliapoorum ...	96	2	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...
Calicut ...	78	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Trichinopoly ...	280	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas Mount ...	397	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras ...	751	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,892	15	...	...	1	2	2	...	...	...	1	...	4	25	5·1	9	1·84
Rangoon ...	792	...	2	...	1	...	1	5	...	1	...	...	...	10	...	2	...
Toungoo ...	375	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyoo ...	542	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ...	110	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
	1,819	...	2	...	1	...	1	5	...	2	...	...	...	11	6·0	2	1·10
Taraghur, Ajmere (8 months) ...	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo ...	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ...	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Madras Troops, 7 months) ...	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	353	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
AVERAGE FOR THE YEAR ...	681	1	...	...	...	...	...	...	...	...	...	...	...	1	1·4	1	1·47

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.				
Army of Bengal ...	35,122	17	13	6	8	12	14	10	14	17	8	8	7	134	3·8	60	1·71
Army of Madras ...	10,844	16	2	...	2	3	3	5	1	9	2	...	5	48	4·4	16	1·47
Army of Bombay ...	10,840	2	1	2	2	1	1	1	1	6	5	...	3	25	2·3	16	1·48
Army of India ...	56,806	35	16	8	12	16	18	16	16	32	15	8	15	207	3·6	92	1·62

EUROPEAN TROOPS, 1871.

XXVI.

TABLE showing the PREVALENCE of APOPLEXY and SUNSTROKE in each MONTH, and the DISTRIBUTION of these DISEASES by STATIONS and PROVINCES.

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Deolalee Depôt (Bengal Troops)	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...
Poona and Bombay Depôts ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Bengal and N. W. P. ...	..	...	...	...	2	...	...	...	...	...	...	...	..	2	...	1	...
Recruits, Invalids, &c., „	.	..	.	..	1	...	...	...	...	...	...	...	...	1	...	...	...
Fort William ...	800	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum ..	672	2	...	...	...	...	...	...	...	1	...	..	..	3	...	1	...
Barrackpore .	504	...	...	...	1	..	...	...	..	...	...	...	..	1	...	...	...
	1,976	2	...	..	1	...	..	...	...	1	...	...	...	4	2·0	1	·61
Hazareebaugh ..	887	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...
Dinapore ..	881	..	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Benares ..	514	..	...	...	...	1	1	...	...	...	..	...	...	2	...	2	...
Chunar ..	65	...	..	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Fyzabad .	930	...	...	...	...	..	1	...	1	...	...	...	...	2	...	2	...
Lucknow .	2,425	...	..	...	...	...	2	...	...	...	1	...	...	3	...	1	...
Seetapore .	613	...	...	...	...	...	1	...	...	...	..	...	...	1	...	1	...
Futtehghur .	177	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore ..	837	...	...	...	..	...	...	...	...	...	...	...	...	..	...	...	...
Allahabad .	797		...		..	...	...	...	...	1	...	...	...	1	...	...	...
	8,126	...	...	1	...	2	5	...	1	1	1	...	...	11	1·4	8	·99
Shahjehanpore ..	401	..	..	1	...	...	...	...	...	...	...	...	...	1	...	..	...
Bareilly ..	803	...	..	...	...	...	...	...	...	...	...	...	...	...	...	..	...
Moradabad ..	181	..	...	...	...	...	...	..	...	..	..	...	...	...	...	...	...
Roorkee .	367	...	...	...	...	...	...	1	...	.	..	..	...	1	...	...	...
Meerut .	1,644	..	...	1	...	...	...	...	...	...	...	3	...	4	...	...	...
Delhi	418	...	...	...	..	...	...	...	...	...	...	...	...	...	...	1	...
Muttra ..	418	...	...	...	..	...	...	...	...	...	...	..	...	...		...	..
	4,234	...	...	2	..	...	...	1	...	...	...	3	...	6	1·4	1	·23
Agra ..	997	...	..	...	...	...	1	1	...	...	..	...	...	2	.	1	...
Morar ..	1,075	...	...	...	...	...	...	..	..	1	1	...	...	2	...	...	...
Gwalior Citadel ...	310	...	..	...	..	...	1	...	..	...	...	...	...	1	...	..	...
Jhansi .	473	..	...	...	...	...	...	...		...	...	..	...	...	..	...	...
Nowgong .	304	..	...	..	...	...	...	...		...	...	...	...	..	...	...	...
Saugor .	635	...	...	...	...	...	...	...		...	..	...	..	...	...	...	...
Jubbulpore .	326	...	..	...	...	..	...	...	.	...	...	...	...	...	..	...	...
	4,120	..	...	...	...	..	2	1	..	1	1	..	..	5	1·2	1	·24
Umballa	1,177	...	..	..	..	...	1	...	1	..	...	...	...	2	...	2	...
Jullundur	702	...	...	...	...	...	..	..	...	...	...	...	...	...	..	...	...
Ferozepore	1,077	.	...	...	...	...	...	...	...	..	...	..	...	...	...	..	...
Mooltan	843	...	..	...	..	...	3	..	...	...	...	...	..	3	...	1	...
Dera Ismael Khan	100	...	...	...	...	..	...		..	..	...	..	...	...	...	..	...
Sealkote .	1,080	..	..	...	..	..	...	...	...	1	..	...	...	1	...	1	...
Umritsur	161	..	...		...	.	1	...	.	...	..	..	...	1	..	1	...
Fort Lahore	83	..	..	...	...	...	...	1	..		..	...	..	1	...	1	...
Meean Meer ...	907	.	...	...	.	...	1	1	4	.	...	..	..	6	...	3	...
Rawulpindee ..	1,413	...	.	...	.	.	...	1	...	...	...	..	...	1	...	...	...
Campbellpore (9 months) .	153	..	...	...	...	..	2	...	...	...	...	..	...	2	...	...	...
Attock .	166	..	..	...		..	2	...	...	..	...	...	...	2	...	1	...
Nowshera	536	.		...	..	...	1	1	2	1	...	...	...	5	...	2	...
Peshawur	1,853	..	...	...	...	.	2	.	3	...	..	...		5	...	...	...
Cherat		..		.		..	...	1	..	.	..	.	...	1	...	...	..
Troops on march, Punjab	...	.	...	...	...		.	.	..	...	..	...	...	..	..	1	...
Recruits, Invalids, &c., Punjab	...	..	..	...	...	.	...	...	..	...	...	...	...	...	...	...	...
	11,084	..	..	...	...	..	13	5	10	2	...	..	.	30	2·7	13	1·17
Puchmurree, (Bengal Troops, 4 months) .	100	.	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Darjeeling .	68		..	...	...	...	...	...	..	...	..	...	..	..	...	...	...
Raneekhet	376	...	..	...	...	...	...	...	...	...	...	..	...	...	...	..	...
Chuckrata	774	.	...	...	...	.	...	...	..	...	...	...	.	..	...	...	...
Dugshaie	917	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo .	771	.	...	...	...	...	...	...	..	...	...	...	...	...	..	..	...
Jutogh (10 months) .	88	...	...	..	...	.	..	..	...	...	...	...	...	...	...	...	...
Dhurmsalla (7 months) ..	112	...	..	.	1	..	...	..	...	...	..	...	...	1	.	...	...
Chumba Hills (6 months) ...	577	...	..	...	...	..	..	..	...	.	...	..	...	...	...	...	...
Murree Hills (6 months) ...	500	..	...	..	...	..	...	..	...	...	.	...	...	...	...	...	...
AVERAGE FOR 12 MONTHS ...	3,652	...	..	..	1	...	...	...	..	.	.	...	...	1	·3	...	...
Darjeeling Depôt (7 months) ...	115	.	..	...	.	...	...	...	..	...	.	..	...	...	.	...	...
Nynee Tal „ (10 months)	211	...	.	...	1	...	...	...	...	..	..	...	...	1	..	1	..
Landour „ (7 months) ..	217	...	...	...	1	...	...	..	...	...	...	...	...	1	.	...	..
Kussowlie „ (7 months) ...	637	1	...	...	..	..	...	..	..	...	...	...	...	1		1	..
Dalhousie „ (7 months) .	304	..	..	...	..	..	...	...	...	.	..	..	...	...	.	...	...
Murree „ (6 months) .	584	...	...	.	...	.	.	...	...				...	...		...	...
		1	...	...	2	...	...	...	...	...	...	...	...	3	·9	2	·44

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
On the march, Bombay Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona ,, ,,	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Colaba ,, ,,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
On the march, Madras Presidency ...	...	...	1	1	...	...	...	...	...	...	...	...	1	3	...	...	...
Poonamallee and Presidency Depôts ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts, Madras Troops ...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Nusseerabad ...	720	...	1	...	...	...	2	...	...	...	...	...	...	3	...	2	...
Neemuch ...	458	...	...	...	...	1	...	...	...	1	...	...	1	3	...	...	...
Indore ...	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow ...	1,413	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...
Deesa ...	848	...	...	...	2	2	9	4	...	...	...	...	...	17	...	4	...
Ahmedabad and Baroda ...	273	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Kurrachee and Ghizree ...	789	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Hyderabad ...	290	1	...	...	...	1	...	...	...	...	...	...	...	2	...	1	...
Aden ...	716	...	...	...	...	1	1	...	1	1	...	...	...	4	...	1	...
	5,020	1	1	...	2	5	12	4	1	2	1	...	1	30	5·3	11	1·96
Bombay ...	463	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur ...	125	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	642	1	...	...	...	1	...	...	...	...	...	...	...	2	...	1	...
Poona and Kirkee ...	2,228	...	...	...	1	...	1	...	...	...	...	...	1	3	...	1	...
Sattara ...	189	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum ...	998	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Secunderabad ...	2,121	...	1	...	2	1	...	...	...	...	...	...	...	4	...	2	...
Kamptee ...	1,020	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	...
	7,783	1	1	1	4	2	1	...	...	...	...	...	1	11	1·4	5	·63
Bellary ...	902	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore ...	1,562	...	...	...	...	1	...	...	1	...	...	...	...	2	...	...	...
Cannanore ...	828	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Malliapoorum ...	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut ...	78	1	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...
Trichinopoly ...	280	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	...
St. Thomas Mount ...	397	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...
Madras ...	751	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
	4,892	2	...	1	1	3	...	...	1	1	...	...	...	9	1·8	1	·20
Rangoon ...	792	...	...	...	2	...	...	...	...	...	...	...	...	2	...	...	...
Toungoo ...	375	...	1	...	2	...	...	...	...	...	...	...	...	3	...	...	...
Thayetmyoo ...	542	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	...
Port Blair ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,819	...	1	...	5	...	...	...	...	...	...	...	...	6	3·3	1	·55
Taraghur, Ajmere (8 months) ...	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo ...	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ...	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Madras Troops, 7 months) ...	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	353	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE FOR THE YEAR ...	681	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Army of Bengal ...	35,122	3	...	3	7	2	20	7	11	5	2	3	1	64	1·8	28	·80
Army of Madras ...	10,844	3	3	2	9	4	...	...	1	1	...	...	1	24	2·2	6	·55
Army of Bombay ...	10,840	3	1	1	3	6	13	4	1	2	1	...	2	37	3·4	13	1·20
Army of India ...	56,806	9	4	6	19	12	33	11	13	8	3	3	4	125	2·2	47	·83

EUROPEAN TROOPS, 1871.

XXVII.

TABLE showing in DETAIL the CAUSES of DEATH in the ARMIES of the THREE PRESIDENCIES.

TOTAL LOSS OF THE ARMY OF INDIA BY DEATH 996. PER 1,000 OF AVERAGE STRENGTH 17·53.

CAUSES OF DEATHS.	BENGAL.		MADRAS.		BOMBAY.		ARMY OF INDIA.		
	Deaths in Hospital.	Deaths out of Hospital.	Deaths in Hospital.	Deaths out of Hospital.	Deaths in Hospital.	Deaths out of Hospital.	Deaths in Hospital.	Deaths out of Hospital.	Died per 1,000 of Average Strength.
Cholera	25	...	36	...	1	...	62	...	1·09
Smallpox	1	...	...	...	...	...	1	...	
Measles	...	...	1	...	...	...	1	...	
Intermittent Fevers	...	...	...	...	1	...	1	...	
Remittent and Continued Fevers ..	79	...	9	...	10	...	98	...	1·74
Enteric Fever (True)	66	...	16	...	10	...	92	...	1·62
Erysipelas	3	...	1	...	...	...	4	...	
Diphtheria	...	..	...	...	1	...	1	...	
Pyæmia (following injury of Tibia)	...	...	...	...	1	...	1	...	
Hydrophobia	4	..	1	...	...	...	5	...	
Rheumatism, Acute	1	...	1	...	...	...	2	...	
Secondary Syphilis (Caries of Skull) ...	2	...	1	..	...	...	3	..	
Cancer of Pylorus	2	...	...	...	...	...	7	...	
„ of Intestine	1	...	...	...	...	...			
„ of Rectum	1	...	...	...	...	...			
„ of Peritoneum	..	...	..	...	1	...			
„ of Scrotum	1	...	..	...	...	...			
„ of Kidney	1	...	...	..	...	...			
Phthisis Pulmonalis	58	...	13	..	16	...	87	...	1·53
Morbus Coxæ	1	...	...	...	...	...	1	...	
Scurvy .. .	1	...	...	...	1	...	2	...	
Meningitis	8	...	1	..	2	...	11	...	
Myelitis (Paraplegia)	1	...	...	...	...	...	1	...	
Encephalitis, Softening	1	...	3	...	2	...	10	...	
„ Abscess of Brain ...	...	...	1	...	2	...			
„ Abscess of Cerebellum ...	1	...	...	...	...	...			
Locomotor Ataxy	...	...	...	...	1	...	1	...	
Tetanus (Ideopathic)	1	..	...	...	...	...	2	...	
„ (following fracture of Fibula) ...	...	...	1	...	...	...			
Apoplexy, Heat	24	...	4	...	11	...	39	...	·99
„ Sanguineous	3	...	2	...	...	...	5	...	
„ Congestive (Ebriositas) ..	2	3	..	2	2	3	4	8	
Caries of Mastoid Cells	1	...	...	..	1	...	2	...	
„ of Cervical Vertebræ	..	...	1	...	...	...	1	...	
Epistaxis (cause not ascertained) ...	1	...	...	...	...	...	1	...	
Ozena (with Larvæ)	1	...	...	...	.	...	1	...	
Pericarditis	1	...	1	...	1	...	3	..	1·63
Valve Disease of Heart . ..	23	...	6	...	7	...	36	...	
Hypertrophy „	5	...	2	...	...	...	7	...	
Fatty Degeneration „ .. .	3	...	...	...	1	...	4	...	
Rupture of Heart	2	...	...	...	...	...	2	...	
„ of Aorta	1	...	2	...	...	...	3	...	
Aneurism of Aorta	24	...	11	...	6	...	41	...	
Œdema Glottidis	.	1	...	..	...	...	...	1	·99
Bronchitis	2	...	3	...	...	...	5	...	
Pneumonia	38	...	2	..	3	...	43	...	
Pleurisy .	4	..	...	..	...	...	4	...	
Asthma	2	..	...	...	...	...	3	..	
„ (with Pulmonary Extravasation) .	1	...	...	...	...	...			
Hæmoptysis (from enlarged liver pressing on the lung)	1	...	..	..	...	...	1	..	
Ulcer of Stomach	1	..	...	...	1	...	2	...	
Fibrous Tumour of Stomach	1	...	..	...	...	...	1	...	
Enteritis (Perforation)	2	...	1	...	...	...	3	...	
Perforation of Ileum	1	...	...	...	1	...	2	...	
Iliac Abscess	...	...	1	...	...	...	1	...	
Peritonitis (Ideopathic)	...	...	1	...	...	...	1	..	
Jaundice	1	...	...	...	...	...	1	...	
Cirrhosis of Liver	5	...	1	...	1	...	7	...	
Hepatitis	96	...	39	...	20	...	155	.	2·73
Spleen Disease	1	...	...	...	...	...	1	...	
Dysentery . ..	41	...	25	...	10	...	76	...	1·34
Diarrhœa	4	...	...	...	3	...	7	.	·12
Nephria	7	...	...	...	5	...	12	.	
General Debility	4	...	...	...	...	...	4	..	
Delirium Tremens	9	...	7	...	6	...	22	...	·39
Poisoning by Opium, accidental ..	...	1	...	...	...	..	...	1	1·65
Suffocated while drunk	...	6	...	1	...	...	...	7	
Asphyxia	...	1	...	...	...	...	...	1	
Bone lodged in Œsophagus, death by Hæmorrhage	1	...	...	...	...	...	1	.	
Drowned	...	10	...	5	...	1	...	16	
Accidental Deaths	3	15	..	6	1	2	4	23	
Murder	...	...	..	...	2	1	2	1	
Execution	...	...	...	...	...	2	...	2	
Found dead, cause not ascertained ...	..	...	...	1	...	...	...	1	
Suicidal Deaths, Gunshot	...	11	..	7	...	5	...	35	
„ Drowning	...	4	...	...	...	...			
„ Hanging	...	1	...	1	...	...			
„ Cut Throat	...	1	...	...	...	1			
„ Poison	...	2	...	...	...				
„ Fall from Barracks ...	...	1	...	1	...	...			
Ratio per 1,000 for Deaths from Causes not specially calculated	...	...	...	...	...	...	...	...	1·71
	569	57	194	24	135	15	900	96	17·53

EUROPEAN TROOPS, 1871.

XXVIII.

TABLE showing in DETAIL the CAUSES of INVALIDING during 1871.

All Invaliding up to the date of sailing of the last Troopship in the beginning of April 1872 is included. The Invalids of the Madras and Bombay Armies who left India in the early months of 1871 do not appear in this statement.

Army of Bengal—Number Invalided ... ... 1,564 Invalided per 1,000 of Strength ... ... 47·53
Army of Madras „ ... ... 489 „ ... ... 45·09
Army of Bombay „ ... ... 328 „ ... ... 30·26
Army of India „ ... ... 2,381 „ ... ... 43·62

CAUSES OF INVALIDING.	BENGAL.			MADRAS.			BOMBAY.			ARMY OF INDIA.		
	For Change.	For Discharge.	Per 1,000 of Strength.	For Change.	For Discharge.	Per 1,000 of Strength.	For Change.	For Discharge.	Per 1,000 of Strength.	For Change.	For Discharge.	Per 1,000 of Strength.
Intermittent Fevers ...	89	2	3·01	1	...	·65	17	1	1·94	107	3	2·33
Remittent and Continued Fevers ...		2		6	...		3	...		15	2	
Typhoid Fever ...	1	...	...	...	...	...	...	...	...	1	...	
Rheumatism ...	66	22	2·68	17	4	1·91	9	4	1·20	92	30	2·23
Secondary Syphilis ...	66	34	3·04	31	8	3·60	12	3	1·38	109	45	2·82
Cancer of stomach ...	...	1	...	...	...	..	..	...	...	...	1	
Phthisis pulmonalis ...	51	74	3·79	17	27	4·06	5	20	2·31	73	121	3·55
Scrofula ...	8	3	...	1	...	...	..	2	..	4	5	
Hipjoint disease ...	...	4	...	...	...	...	...	...	...	..	4	
Goitre ...	..	1	...	...	...	...	...	...	...	...	1	
Anæmia ...	38	5	...	5	1	...	13	1	...	56	7	
Obesity ...	1	...	...	..	...	...		..	...	1	...	
General Dropsy ...	1	...	.	...	...	...	2	...	...	3	...	
Meningitis ...	1	2	...	1	...	...	1	...	.	8	2	
Encephalitis ...	...	1	...	...	3	...	...	...	...	..	4	
Sunstroke, effects of ...	7	..	·21	...	...	..	1	..	·09	8	..	·15
Paralysis ...	11	5	..	1	4	..	1	...	...	13	9	
„ hemiplegia 9 ...	...	...	.	...	...	..	...	...	...	.	...	
„ paraplegia 2 ..	...	...	...	..	...	...	...	...	...	...	...	
„ local 1 ...	...	...	...	...	..	...	...	...	...	...	...	
„ locomotor ataxy 6 ...	...	...	...	...	...	...	...	...	...	...	...	
„ character not stated 4 ...	...	...	...	...	...	...	...	..	..	...	...	
Epilepsy ...	5	16	·64	3	6	·83	...	4	·37	8	26	·62
Mania ...	4	11	1·86	1	1	·74	2	...	·74	7	12	1·41
Melancholia ...	6	5		1	1		1	...		8	6	
Dementia ...	13	22		1	3		...	5		14	30	
Neuralgia ..	11	...	...	2	1	...	3	...	...	16	1	
Ophthalmia ...	6	4	·61	4	1	·65	2	1	·74	12	6	·64
Defective vision ..	3	7		...	2		4	1		7	10	
Otitis ...	3	1	..	...	1	...	...	...	...	3	2	
Deafness ..	4	3	...	1	2	...	1	1	..	6	6	
Pericarditis ...	1	1	...	...	...	...	1	1	.	2	2	
Valve disease of Heart ...	12	61	3·65	7	8	2·67	3	15	2·31	22	81	3·19
Hypertrophy of Heart ...	13	21		5	4		4	3		22	28	
Aneurism .	3	10		...	5		...	...		3	15	
„ thoracic aorta 14 ...	...	...		...	...		...	..		...	...	
„ abdominal aorta 3 ...	...	...		...	...		...	...		...	...	
„ femoral artery 1 ...	...	...		...	...		...	...		...	...	
Angina pectoris ...	...	...	...	1	...	...	...	...		1	...	
Palpitation ...	55	5	1·82	7	3	·92	12	1	1·20	74	9	1·52
Varix ...	6	3	..	...	2	...	..	3	...	6	8	
Laryngitis ...	...	1	1·28	...	...	·55	...	..	1·84	...	1	1·25
Bronchitis ...	27	10		3	2		14	3		44	15	
Asthma ...	2	1		1	...		1	2		4	8	
Pleurisy ...	...	1		...	...		...	...		...	1	
Stomatitis .	1	...	...	...	...		1	...	...	2	...	
Gastritis ..	3	...	..	...	...	...	1	..	...	4	...	
Dyspepsia ...	2	...	...	1	1	..	1	...	.	4	1	
Dysentery ...	51	4	2·10	54	2	6·09	4	...	·65	109	6	2·60
Diarrhœa ...	14	...		10	...		3	..		27	...	
Hepatitis ...	231	21	7·06	81	5	7·93	46	8	4·98	358	34	7·18
Cyst of Liver ...	...	1	..	..	...	...	...	...	...	...	1	
Cirrhosis ..	1	...	...	...	...	...	...	2	...	1	2	
Ascites ...	...	1	...	...	...	...	1	2	...	1	3	
Spleen disease ...	10	1	·34	3	...	·28	2	1	·28	15	2	·31
Addison's disease ...	1	...	...	...	...	...	...	...	...	1	...	
Hæmorrhoids ..	1	...	..	1	...	...	1	...	.	3	...	
Fistula in ano ...	1	1	...	...	1	...	..	1	...	1	3	
Hernia ...	5	7	...	...	4	.	...	11	...	5	22	
Nephritis ...	4	4	...	1	2	...	.	...	...	5	6	
Diabetes ...	1	1	...	...	...	...	...	...	...	1	1	
Enuresis ..	...	...	...	1	...	...	...	...	..	1	...	
Calculus ...	...	...	...	...	..	...	...	1	..	...	1	
Cystitis ...	2	...	...	1	...	...	1	...	.	4	...	
Stricture of urethra .	9	2	..	2	...	...	1	...	.	12	2	
Orchitis ...	1	3	...	2	1	...	...	...	...	3	4	
Varicocele ...	3	1	...	1	...	...	...	...	...	4	1	
Periostitis ...	2	...	·64	1	1	·55	1	1	·55	4	2	·61
Synovitis ...	5	3		2	...		2	1		9	4	
Caries of upper jaw ...	1	...		...	...		...	...		1	...	
Necrosis ..	2	...		..	1		...	.		2	1	
Contraction ...	4	4		..	1		1	..		5	5	
Abscess ...	3	2	·40	...	1	·65	...	..	...	3	3	·42
Ulcer ...	8	3		6	...		...	...	...	14	3	
Skin diseases ...	3	...	...	...	...	...	...	...	...	3	...	
Guinea worm ...	...	...	...	1	...	...	...	...	...	1	...	
Tumour ..	1	1	...	1	...	...	...	...	...	2	1	
Hypertrophy of leg ...	...	1	...	..	...	...	...	..	...	...	1	
Atrophy of muscle ..	...	...	...	...	1	...	...	...	...	...	1	
Rupture of muscle ...	...	...	...	...	1	..	...	...	...	...	1	
General debility ...	219	33	8·97*	72	9	8·02*	35	6	5·07	326	48	8·01
Injuries ...	...	...	...	...	...	...	...	...	...	...	...	
„ fracture ...	5	7	·82	2	2	1·01	1	...	·92	8	9	·88
„ dislocation ...	2	...		...	1		...	1		2	2	
„ sprain ...	1	1		...	...		1	2		2	3	
„ accidental wounds ...	2	5		1	2		...	4		3	11	
„ self-inflicted wounds ...	1	...		...	...		...	..		1	...	
„ concussion of brain ...	...	...		1	1		...	...		1	1	
„ amputation ...	...	3		...	1		...	1		...	5	
Ratio per 1,000 for invaliding from causes not specially calculated ...	...	...	3·92	..	...	3·95	...	...	3·69	..	...	3·90
TOTAL ..	1,115	449	47·53†	362	127	45·09	215	113	30·26	1,692	689	43·62†

---

* With Anæmia.

† This ratio is calculated after deducting the strength of the 22nd Brigade of Artillery and the 1-19th, 38th, and 104th Regiments, which went to England, and took home the men who would have been recommended for change had the corps remained in India.

EUROPEAN TROOPS, 1871.

XXIX.

STATEMENT showing the GAIN and LOSS in STRENGTH of the REGIMENTS composing the ARMY of INDIA during 1871.

A.—GAIN AND LOSS OF THE DIFFERENT ARMS.

		Artillery, Sappers and Miners.	Cavalry.	Infantry.	Army of India.
Strength at the beginning of the Year.					
At Head Quarters and on Detachment at the beginning of 1871	...	10,147	3,947	39,488	53,582
Recruits from England in India on march to join	...	133	53	647	833
On Staff employment	...	17	16	56	89
In Military and other Prisons	...	59	16	237	312
Elsewhere, sick in other Hospitals, and men remaining at Convalescent Depôts	...	219	68	909	1,196
Total Strength in India at the beginning of 1871	...	10,575	4,100	41,337	56,012
Additions during the Year.					
Transfers received from other Regiments	...	997	14	135	1,146
Transferred from Regiments leaving India by volunteering	...	147	...	960	1,107
Recruited in India	New Soldiers ...	32	9	108	149
	Time-expired men ...	9	...	3	12
Received from England, landed after 1st January ...	Recruits ...	929	57	2,520	3,506
	Invalids recovered ...	6	3	172	181
Deserters rejoined	...	5	1	27	33
Total Additions of the Year	...	2,125	84	3,925	6,134
Loss during the Year.					
Transfers given to other Regiments	...	1,161	21	1,106	2,288
Time-expired Men who have left the Service	...	205	71	404	680
Men who have purchased their discharge...	...	12	12	46	70
Men discharged otherwise	...	...	...	1	1
Invalided	For discharge ...	141	54	493	688
	For change of climate ...	431	167	1,093	1,691
Dismissed by Sentence of Court Martial	...	19	2	85	106
Deserted	...	5	2	57	64
Died at Head Quarters and on Detachment	...	168	93	615	876
Died absent from the Regiment	At Convalescent Depôts ...	10	6	34	50
	In other Hospitals	12	2	34	48
Total Loss of the Year	...	2,164	430	3,968	6,562
Strength remaining towards the close of 1871	...	10,536	3,754	41,294	55,584

ABSTRACT.

	Artillery.	Cavalry.	Infantry.	Army of India.
Remained at the beginning of 1871	10,575	4,100	41,337	56,012
Added during 1871	2,125	84	3,925	6,134
Total ...	12,700	4,184	45,262	62,146
Deduct Loss during 1871	2,164	430	3,968	6,562
Remain towards the close of 1871 ...	10,536	3,754	41,294	55,584

B.—GAIN AND LOSS OF THE ARMY OF EACH PRESIDENCY.

		Army of Bengal.	Army of Madras.	Army of Bombay.	Army of India
Strength at the beginning of the Year.					
At Head Quarters and on Detachment at the beginning of 1871		33,201	9,998	10,383	53,582
Recruits from England in India on march to join		648	59	126	833
On Staff employment		45	15	29	89
In Military and other Prisons		179	71	62	312
Elsewhere, sick in other Hospitals, and men remaining at Convalescent Depôts ...		684	346	166	1,196
Total Strength in India at the beginning of 1871 ...		34,757	10,489	10,766	56,012
Additions during the Year.					
Transfers received from other Regiments		742	244	160	1,146
Transferred from Regiments leaving India by volunteering		691	176	240	1,107
Recruited in India	New Soldiers ...	99	37	13	149
	Time-expired Men ..	5	7	...	12
Received from England, landed after 1st January	Recruits ...	1,945	1,150	411	3,506
	Invalids recovered .	90	90	1	181
Deserters rejoined		17	7	9	33
Total Additions of the Year ..		3,589	1,711	834	6,134
Loss during the Year.					
Transfers given to other Regiments		1,444	615	229	2,288
Time-expired Men who have left the Service		421	130	129	680
Men who have purchased their discharge		39	17	14	70
Men discharged otherwise		...	1	...	1
Invalided	For discharge	449	126	113	688
	For change of climate ...	1,115	361	215	1,691
Dismissed by Sentence of Court Martial		66	6	34	106
Deserted		40	14	10	64
Died at Head Quarters and on Detachment		554	186	136	876
Died absent from the Regiment	At Convalescent Depôts ...	31	12	7	50
	In other Hospitals ...	24	18	6	48
Total Loss of the Year ..		4,183	1,486	893	6,562
Strength remaining towards the close of 1871*		34,163	10,714	10,707	55,584

ABSTRACT.

	Bengal.	Madras.	Bombay.	Army of India.
Remained at the beginning of 1871	34,757	10,489	10,766	56,012
Added during 1871	3,589	1,711	834	6,134
Total ...	38,346	12,200	11,600	62,146
Deduct Loss during 1871	4,183	1,486	893	6,562
Remain towards the close of 1871 ...	34,163	10,714	10,707	55,584

---

* This statement has reference only to those regiments and batteries which have spent the year 1871 in India. The strength shown here as remaining is the strength of these corps, and not of the Army, which, as the rule, is reinforced from home before the end of the year.

EUROPEAN

X

ABSTRACT of the RETURNS showing the ADMISSIONS, DEATHS, and

This Table does not include the Statistics of Regiments present for short fragmentary periods. Hence the Totals of the Strength, Admissions and Deaths
Month, and therefore afford a complete record. It is also to be noted that the figures of this Table must not be regarded as exhibiting with accuracy
on the Regimental Rolls who are in India,

1.—*REGIMENTS of*

	REGIMENTS & BATTERIES, & STATION OF 1871.	YEAR OF ARRIVAL.*		Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Average Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
1	2-19th Regiment, Fort William	1863	1869	December 1869, from Madras Presidency	859	1108·3	17·46	53·55
2	XXII Brig., 3 Battery, R Art., Fort William (10 months, January to October)...	...	...	November 1866, from Lucknow ...	63	666·7	...	...
3	107th Regiment, Dum-Dum, with Detachment of 238 men at Barrackpore	...	...	November 1870, from Hazareebaugh ...	930	1223·7	24·73	43·01
4	VIII Brig., F. Battery, R. Art., Barrackpore ...	1868	1868	February 1871, from Seetapore ...	145	1758·6	6·90	13·80
5	XVI Brig., B. Battery, R. Art., Barrackpore ...	...	...	January 1870, from Meerut	152	1703·9	32·90	26·32
				REGIMENTS OF BENGAL PROPER ...	2,141	1235·0	20·55	42·97

2.—*REGIMENTS OF BEHAR,*

	REGIMENTS & BATTERIES, & STATION OF 1871.	In India.	In the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Average Strength.	By Deaths.	By Invaliding.
1	63rd Regiment, Hazareebaugh	1870	1870	December 1870, from England ...	922	1380·7	17·35	34·70
2	96th Regiment, Dinapore, with Detachment of 65 men at Chunar	1866	1869	November 1870, from Dum-Dum ...	872	1169·7	20·64	58·49
3	VIII Brig., B. Battery, R. Art., Dinapore	1866	1866	December 1869, from Lucknow ...	135	1407·4	59·26	111·11
4	1-3rd Regiment, Wing, Benares	1867	1867	November 1870, from Dugshaie ...	390	1176·9	25·64	...
5	F. Brig., A. Battery, R. H. Art., Benares	...	...	December 1869, from Umballa ...	139	1611·5	28·78	28·78
6	26th Regiment, Fyzabad	1865	1868	January 1870, from Fort William ...	848	871·5	10·61	49·53
7	XVI Brig., E. Battery, R. Art., Fyzabad	...	...	February 1871, from Saugor	130	1238·5	30·77	61·54
8	F. Brigade, C. Battery, R. H. Art., Lucknow ...	...	...	December 1869, from Morar ...	149	1993·3	13·42	114·09
9	VIII Brig., C. Battery, R. Art., Lucknow	1866	1866	February 1870, from Morar	138	1442·0	28·99	72·46
10	XXIV Brig., 3 Battery, R. Art., Lucknow	...	...	January 1869, from Morar	83	855·4	72·29	24·10
11	21st Hussars, Lucknow	...	...	December 1869, from Umballa ...	405	1343·2	17·28	69·14
12	1-17th Regiment, Lucknow	1870	1870	February 1870, from England ...	921	1105·3	22·80	41·26
13	62nd Regiment, Lucknow	1869	1869	February 1869, from England ...	840	921·4	10·71	45·24
14	1-3rd Regiment, Head Quarters, Seetapore ...	1867	1867	November 1870, from Dugshaie ...	489	813·9	18·40	38·68†

* Regiments and Batteries of the old Local Army are blank in these columns.

† For the Regiment as a body.

XX.

INVALIDING of each REGIMENT of the ARMY of BENGAL for the YEAR.

do not correspond with the Totals shown in Tables II and VI—XII, which contain the Strength, Admissions and Deaths of all European Troops in India in each
the relation of Sickness and Mortality to the localities indicated, since the Regimental Return is designed to include all cases of disease in men borne
whether absent or present with the Regiment.

BENGAL PROPER.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1871.																											
			Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions	952	...	...	72	133	8	25	133	19	...	...	6	4	...	2	5	1	6	6	36	3	33	40	72	13	104	...	24	84	60	63
	Deaths ...	15	...	...	...	1	2	...	...	...	...	...	...	1	...	1	...	...	...	3	...	...	...	...	6	...	...	...	...	...	...	1
	Invaliding...	46	...	...	1	...	...	1	...	6	...	...	3	5	...	...	...	...	...	7	2	...	4	2	8	...	...	...	...	...	...	7
2	Admissions	42	...	...	2	4	2	1	1	...	...	...	1	1	...	...	...	...	5	...	3	...	1	3	3	...	4	...	1	*3	3	4
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Admissions	1,138	2	...	84	308	2	32	92	21	3	...	27	4	3	12	5	3	9	8	30	2	40	55	81	2	71	2	11	60	100	69
	Deaths ...	23	1	...	...	...	2	...	...	...	1	...	...	1	1	...	...	1	...	4	...	...	...	...	8	...	...	1	...	...	3	...
	Invaliding...	40	...	...	...	...	...	3	...	4	...	...	4	1	1	2	...	...	3	1	3	...	1	...	6	1	...	...	...	...	2	8
4	Admissions	255	...	...	5	57	...	18	24	...	...	...	5	4	1	...	2	...	2	...	5	3	3	22	14	...	30	...	2	18	31	9
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
5	Admissions	259	...	...	18	44	...	9	9	7	...	...	6	...	...	1	4	1	1	...	3	1	18	16	32	3	35	...	1	12	33	5
	Deaths ...	5	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	1	...
	Invaliding...	4	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...
	Admissions	2,646	2	...	181	546	12	85	259	47	3	...	45	13	4	15	16	5	23	14	77	9	95	136	202	18	244	2	30	177	227	150
	Deaths ...	44	1	...	...	1	4	...	...	...	1	...	1	3	1	1	...	1	...	7	...	...	1	...	16	...	...	1	...	...	4	1
	Invaliding...	92	...	...	1	...	...	5	...	10	...	...	7	6	1	2	...	...	3	8	5	...	5	2	18	1	...	...	...	...	2	16

BENARES, OUDE, and CAWNPORE.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions	1,273	1	...	128	190	18	28	310	31	1	1	28	27	1	3	5	2	66	5	74	3	23	45	27	1	31	1	11	66	65	81
	Deaths ...	16	...	...	...	1	6	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	4	...	1	...	...	...	...	...	1	1
	Invaliding...	32	...	...	1	...	...	...	...	1	...	...	3	9	...	1	...	...	1	4	3	...	...	...	4	...	...	...	...	...	...	5
2	Admissions	1,020	6	...	71	63	2	50	244	30	...	...	30	3	...	4	5	2	48	3	50	6	62	56	66	3	30	1	16	76	37	41
	Deaths ...	18	5	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	4	...	3	...	...	...	...	...	2	...
	Invaliding...	51	...	...	...	1	...	6	...	...	...	...	13	2	...	1	...	...	1	4	2	...	6	3	4	...	...	1	...	1	1	5
3	Admissions	190	1	...	19	7	...	7	23	...	...	...	...	...	1	3	...	...	1	1	8	...	2	21	48	...	10	...	2	11	15	10
	Deaths ...	8	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	5	...	...	...	...	...	1	...
	Invaliding...	15	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	7	...	...	...	...	...	2	3
4	Admissions	469	2	...	33	41	...	19	115	7	3	...	2	1	1	2	2	1	18	2	35	1	5	30	20	1	37	3	12	21	29	16
	Deaths ...	10	2	...	...	3	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding...	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Admissions	224	1	...	21	9	1	7	46	6	1	1	...	...	...	...	2	...	2	...	7	...	10	13	18	...	9	...	7	28	22	14
	Deaths ...	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...
	Invaliding...	4	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...
6	Admissions	739	...	...	149	13	2	48	110	71	2	...	26	3	2	3	...	2	23	3	30	6	26	15	37	1	24	...	26	38	37	33
	Deaths ...	9	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	2	1
	Invaliding ...	42	...	...	1	...	...	3	...	15	...	...	7	1	...	...	...	...	...	1	2	...	1	1	3	...	...	...	1	1	...	5
7	Admissions	101	...	...	59	7	...	19	14	2	...	...	9	2	...	...	...	...	...	...	8	...	4	9	8	...	3	...	3	5	7	2
	Deaths ...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...
	Invaliding...	8	...	...	...	...	...	...	...	...	...	...	6	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
8	Admissions	297	...	...	62	13	1	23	30	...	...	...	10	...	...	...	2	1	3	...	7	2	1	21	23	1	8	...	4	22	32	22
	Deaths ...	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	17	...	...	...	...	...	2	...	...	...	...	5	...	...	...	...	...	...	1	...	...	...	...	4	...	...	1	...	...	2	2
9	Admissions	199	1	...	30	22	...	5	29	1	...	...	12	1	1	...	1	...	1	3	8	3	5	9	7	...	4	...	2	11	20	17
	Deaths ...	4	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding...	10	...	...	...	...	...	2	1	...	...	...	1	1	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	2
10	Admissions	71	...	...	1	9	1	1	17	1	...	...	...	1	...	2	...	1	3	1	4	...	3	2	3	...	3	...	...	9	7	2
	Deaths ...	6*	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	2	...
	Invaliding...	2*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
11	Admissions	544	...	...	81	3	...	22	82	4	2	...	14	...	2	2	...	5	13	7	30	1	7	23	21	2	29	...	6	64	100	18
	Deaths ...	7	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	3	...
	Invaliding...	28	...	...	1	...	...	1	1	3	...	...	9	...	1	1	...	...	...	5	...	...	...	...	3	...	...	...	...	...	2	1
12	Admissions	1,018	17	...	31	183	13	48	204	6	2	...	30	8	...	...	3	1	34	9	33	3	26	65	29	...	30	1	18	91	62	17
	Deaths ...	21	6	...	...	1	6	...	...	...	...	...	1	3	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	1	...
	Invaliding...	38	...	...	...	...	...	6	...	5	...	...	10	2	...	...	2	...	1	3	...	...	3	...	2	...	...	...	...	1	...	3
13	Admissions	774	2	1	37	89	4	14	227	2	...	...	21	4	1	2	...	3	25	5	14	8	31	35	51	1	21	...	15	91	39	31
	Deaths ...	9	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	4	...	...	...	...	...	1	...
	Invaliding...	38	...	...	...	...	...	1	...	1	...	...	12	3	...	1	...	...	1	3	...	...	6	...	7	...	...	...	1	...	...	3
14	Admissions	398	...	...	59	16	1	24	74	1	...	...	14	3	1	1	2	2	9	...	24	2	17	5	11	...	29	1	7	33	31	29
	Deaths ...	9	...	...	...	1	1	...	...	...	...	...	...	2	1	1	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...
	Invaliding...	34	...	...	1	...	...	3	...	...	...	...	18	1	...	1	...	...	...	2	1	...	...	...	2	...	...	1	...	...	1	3

* For whole Regiment with Head Quarters Wing.

REGIMENTS of BEHAR,

	REGIMENTS & BATTERIES, & STATION OF 1871.	Year of Arrival		Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Strength.	Loss per 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
15	XVI Brig., A. Battery, R. Art., Seetapore ...	...	...	February 1871, from Barrackpore ...	141	950·3	7·09	28·37
16	1-14th Regiment, Cawnpore ...	1868	1868	December 1868, from England ...	830	2204·8	13·25	109·64†
17	XIX Brig., A. Battery, R. Art., Cawnpore ...	...	...	January 1871, from Jhansi ...	148	2223·0	6·76	54·05
18	104th Regiment, Allahabad (10 months, January to October) ...	...	...	February 1871, from Nowshera ...	654	1527·5	24·46	...‡
19	XVI Brig., D. Battery, R. Art., Allahabad ...	...	...	January 1869, from Barrackpore ...	141	1453·9	7·09	63·83
20	XXV Brig., 1 Battery, (XXIV, 7, from July),* R. Art., Allahabad ...	...	...	January 1870, from Darjeeling ...	74	1432·4	...	61·08
				Regiments of Behar, Benares, Oude, and Cawnpore ...	8,449	1298·4	18·58	52·79

3.—REGIMENTS of

	REGIMENTS & BATTERIES, & STATION OF 1871.	In India.	In the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Strength.	By Deaths.	By Invaliding.
1	2-1st Regiment, Head Quarters, Shahjehanpore ...	1868	1870	January 1870, from Nusseerabad ...	533	2257·0	18·76	59·41§
2	2-25th Regiment, Bareilly, with Detachment of 175 men at Moradabad ...	1863	1868	November 1868, from Shahjehanpore and Berhampore ...	951	724·5	9·46	35·75
3	XVI Brig., G. Battery, (XXIII, E, from July), R. Art., Bareilly ...	...	...	December 1870, from Jubbulpore ...	139	1532·4	21·58	71·94
4	109th Regiment, Head Quarters, Roorkee, with Detachment of 189 men at Futtehghur ...	...	...	December 1870, from Mooltan ...	508	1651·6	9·84	29·53
5	Sappers and Miners, Roorkee ...	...	...	... ...	42	1119·0	...	...
6	A. Brig., C. Battery, R. H. Art., Meerut ...	1866	1866	January 1870, from Lucknow ...	151	2086·1	19·87	39·74
7	F. Brig., D. Battery, (D. D. from July), R. H. Art., Meerut ...	...	...	March 1870, from Rawulpindee ...	139	1597·1	7·19	57·55
8	XVI Brig., F. Battery, R. Art., Meerut ...	...	...	February 1870, from Dinapore ...	135	2192·6	22·22	51·85
9	XIX Brig., D. Battery, R. Art., Meerut ...	...	...	March 1870, from Mooltan ...	138	2572·5	21·74	65·22
10	4th Hussars, Meerut ...	1868	1868	March 1868, from England ...	445	1577·5	8·99	49·44
11	105th Regiment, Meerut ...	...	...	January 1869, from Dinapore ...	776	2096·7	32·22	37·37
12	109th Regiment, Wing, Delhi ...	...	...	December 1870, from Mooltan ...	350	2162·8	20·00	40·00
13	XXIV Brig., 1 Battery, R. Art., Delhi ...	...	...	December 1869, from Mooltan ...	79	1797·5	25·32	75·95
14	11th Hussars, Muttra ...	1866	1868	January 1868, from Mhow ...	441	1292·5	15·87	36·28
				Regiments of Rohilcund and Meerut ...	4,827	1652·8	16·99	47·05

---

* On the breaking up of the 25th Brigade of Artillery.

† The Invaliding Ratio for the 1-14th Regiment is increased by the addition of 31 invalids of 1870, who were sent home in January 1871. The loss of the Season 1871 was 60 men.

‡ The 104th Regiment took home many men who would have been invalided for change of climate.

§ For the Regiment as a body.

BENARES, OUDE, and CAWNPORE,—(continued).

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1871.																													
			Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsilitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
15	Admissions	134	...	1	7	6	...	9	12	5	...	...	3	..	...	...	3	1	4	...	3	...	14	1	15	..	10	.	6	9	11	5
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	...	..	...	...	1	...
	Invaliding...	4	...	...	...	...	...	...	...	1	...	...	...	..	...	...	...	...	...	...	...	...	2	...	...	...	...	..	...	...	...	1
16	Admissions	1,830	1	...	392	349	1	30	340	42	4	1	17	20	...	8	16	...	36	17	29	5	32	46	99	18	63	5	13	82	60	104
	Deaths ...	11	...	...	...	...	2	...	...	..	...	...	...	1	...	...	...	...	...	...	...	1	4	...	1	...	...	...	...	.	2	..
	Invaliding...	91	...	...	3	...	...	2	...	2	...	...	9	17	...	2	...	...	2	11	2	...	2	...	26	...	..	...	...	2	1	10
17	Admissions	329	...	...	104	9	...	8	93	11	...	...	8	1	...	3	...	...	...	...	10	1	17	13	8	...	3	...	...	17	15	9
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding...	8	...	...	1	...	...	1	...	1	...	...	1	1	...	...	...	...	...	...	...	..	1	..	...	...	...	...	...	...	...	2
18	Admissions	999	7	...	485	91	1	28	92	7	...	...	6	...	...	1	3	1	4	...	28	1	9	55	21	5	37	2	5	41	39	32
	Deaths ...	16	7	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	1	1	..	.	...	...	...	1	1
	Invaliding...	9	...	...	...	...	1	1	...	...	...	...	2	...	...	...	...	...	..	...	1	...	...	1	3	...	...	...	...	...	...	...
19	Admissions	205	...	...	54	12	...	11	34	5	...	...	3	...	1	1	1	1	3	...	6	1	4	6	4	1	7	...	3	14	17	16
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	..
	Invaliding...	9	...	...	...	...	...	...	...	2	...	...	2	2	...	1	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	2
20	Admissions	106	...	...	37	8	...	5	3	...	...	...	2	...	...	...	...	...	1	2	5	...	2	2	2	4	3	1	2	12	6	9
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	..	...	...	..	...	...	...	...
	Invaliding...	6	...	...	...	..	...	...	...	...	...	...	...	..	...	...	1	...	...	1	1	.	..	..	1	1	...	.	...	...	...	1
	Admissions	10,970	30	2	1,856	1142	45	399	2177	237	15	3	235	74	11	34	45	23	294	58	419	43	300	472	518	38	418	15	158	741	651	508
	Deaths ...	157	23	..	...	12	10	...	..	...	...	...	1	10	9	1	...	...	...	10	2	3	18	1	25	...	...	...	.	...	10	4
	Invaliding...	446	...	...	8	1	1	28	2	31	...	...	101	40	1	9	4	...	6	37	12	...	20	7	69	1	.	3	2	6	9	48

ROHILCUND and MEERUT.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsilitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
1	Admissions	1,203	...	...	375	44	6	66	134	37	3	2	35	6	2	6	8	1	26	4	87	8	13	71	28	4	65	1	14	65	37	52
	Deaths ...	10	...	..	...	3	1	...	...	...	...	...	...	1	1	...	...	...	...	1	...	...	...	1	2	...	.		...	...	...	..
	Invaliding...	54	...	...	1	...	...	3	...	6	...	...	9	4	...	2	2	..	...	6	4	...	...	2	6	1		..	1	.	1	6
2	Admissions	689	...	...	66	104	2	18	146	17	...	...	1	12	...	2	1	1	11	1	28	7	29	15	68	9	18	1	8	51	42	31
	Deaths ...	9	...	...	...	...	...	...	..	..	...	...	...	3	..	...	...	...	...	2	...	...	...	..		.	..	...	.	.	2	2
	Invaliding ..	34	...	..	5	1	...	1	...	1	...	...	1	4	...	2	...	...	...	...	1	...	2	...	10	1	1	...	...	.	...	4
3	Admissions	213	...	...	43	1	...	6	40	5	1	...	2	...	...	1	1	..	3	5	9	3	1	7	11	4	12	2	3	18	21	14
	Deaths ..	3	...	...	..	...	...	...	...	...	...	...	...	...	. .	...	. .	...	...	2	...	...		...	...	...	. .	...	...	...	1	...
	Invaliding...	10	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	2	1	.		.	...	...	3
4	Admissions	839	...	...	126	129	...	30	98	7	...	...	8	5	1	11	3	4	16	10	63	2	50	38	52	1	33	3	4	66	51	28
	Deaths ...	5	...	...	...	..	1	...	...	...	...	...	...	...	...	...	...	...	...	1	..	...	...	...	3	.	.	...	. .	...	...	...
	Invaliding...	15	. .	...	...	...	...	1	...	...	...	...	2	1	...	1	...	. .	1	3	1	...	...	1	4	...	...	..	..	...	...	...
5	Admissions	47	...	...	8	2	...	1	...	...	...	...	1	...	...	...	...	...	...	...	3	..	2	1	1	...	26	..	...	2	. .	...
	Deaths ...	...	..	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	. .	..	...	...	.	.	...	...
	Invaliding...	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	..	...	...	...	.	...	..	...	...	...	...
6	Admissions	315	..	...	32	79	...	5	29	2	...	...	2	1	...	...	8	1	...	9	18	2	11	29	21	1	9	1	3	12	30	10
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	..	1	. .	1			...	.	...	...	...
	Invaliding...	6	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..	...	...	2	. .	...	.	...	2			.	.	...	. .	1
7	Admissions	222	...	...	8	48	...	6	21	3	...	...	3	2	...	...	2	2	2	2	19	1	3	6	16	5	9	2	1	20	29	12
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	..	...	...	..	.	...	...	...	...		...	. .	...	.	. .	. .	.	...	1	...
	Invaliding...	8	...	...	...	...	...	...	...	2	...	...	1	2	...	...	...	...	...	..	...	. .	...	.	2	.				...	1	...
8	Admissions	296	...	...	48	81	2	13	8	5	...	...	1	3	...	...	2	1	4	1	17	1	7	21	21	...	18	1	5	15	16	5
	Deaths ...	3	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1			...	...	...	...	...
	Invaliding...	7	...	...	...	...	...	...	...	1	...	..	1	3	...	...	...	...	...	...	...	...	...	...	...	.		.	.	...	2	...
9	Admissions	355	...	...	67	40	...	25	20	4	1	...	3	3	...	...	1	5	1	4	23	2	10	32	27		23	.	2	13	26	8
	Deaths ...	3	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	..	...	..	...	1	...	.	..	.	. .	...	..	...	1
	Invaliding...	9	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	. .	...	...	.	4		.	.	1	..	...	1
10	Admissions	702	..	2	27	54	2	26	31	15	...	...	12	7	5	2	8	1	10	1	155	56	12	16	27	24	40	4	10	55	73	27
	Deaths ...	4	...	1	...	...	...	...	..	...	. .	...	...	...	. .	...	...	...	...	..	.	.	. .		2	..		...	...	..	1	...
	Invaliding...	22	. .	...	...	...	...	...	...	...	...	...	2	5	...	...	...	...	2	4	...	. .	1	.	3			1	1	...	...	3
11	Admissions	1,627	...	...	805	37	5	31	60	47	6	1	24	14	...	3	6	2	14	15	56	20	97	71	54	5	67	17	11	55	55	40
	Deaths ...	25	.	...	...	2	4	...	...	...	1	...	...	2	...	3	..	..	...	2	...	3	2	..	3	.		1	...	...	...	2
	Invaliding...	29	...	...	...	...	...	1	2	...	...	...	1	5	...	...	...	...	...	5	...	.	4		,			2	...	1	2	3
12	Admissions	757	...	...	314	9	...	24	90	14	1	1	12	4	...	4	7	2	2	1	19	1	17	37	15	.	19	2	4	73	27	28
	Deaths ...	7	...	...	...	2	...	..	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	..	2	.	...	...	. .	...	1	1
	Invaliding...	14	...	. .	...	...	...	1	...	2	...	...	4	1	...	1	...	...	...	...	...	...	2		...	...	.	...	...	...	1	2
13	Admissions	142	...	..	33	3	...	1	20	4	...	...	...	5	...	1	...	...	3	2	7	...	10	13	2		7	2	1	10	11	7
	Deaths ...	2	...	...	...	...	...	...	...	...	...	..	...	...	.	...	..	...	..	...	...	...	. .	...	1		..	...	..	...	...	1
	Invaliding...	6	...	...	...	...	...	. .	...	1	...	...	...	1	..	1	...	...	...	1	..	. .	1	...	1	...	.	...	...	...	...	...
14	Admissions	570	...	...	56	53	4	35	77	8	...	...	8	1	...	5	3	1	10	6	30	1	3	16	36	2	27	...	10	87	40	42
	Deaths ...	7	. .	...	...	...	...	1	...	...	...	. .	...	...	...	1	...	1	...	2	...	...	...	...	2		..	.	...	...	.	...
	Invaliding...	16	...	...	...	. .	...	1	...	...	...	...	4	...	...	2	...	...	...	1	...	...	...	.	1		..	...	. .	...	1	6
	Admissions	7,977	...	2	2,008	693	21	287	780	168	12	4	112	63	8	35	50	21	102	61	534	104	265	379	379	55	408	36	76	542	467	310
	Deaths ...	82	...	1	...	7	8	1	...	.	1	...	..	6	2	4	...	2	...	10	...	3	5	1	17	..	..	1	...	...	6	7
	Invaliding...	230	...	...	7	1	...	8	2	14	...	...	25	29	...	9	2	...	3	24	6	...	11	3	38	3	1	3	3	1	8	29

4.—REGIMENTS of AGRA

	REGIMENTS & BATTERIES, & STATION OF 1871.	YEAR OF ARRIVAL		Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
1	65th Regiment, Agra (10½ months) ...	1871	1871	February 1871, from England ...	920	1065·2	25·00	6·52
2	XIX Brig., F. Battery, R. Art., Agra ...	...	...	January 1870, from Meean Meer ...	148	1797·3	6·76	54·05
3	XXII Brig., 7 Battery, R. Art., Agra ...	...	...	April 1866, from Darjeeling ...	63	2031·7	15·87	...
4	1-11th Regiment, Morar ...	1864	1864	November 1869, from Fyzabad ..	843	2453·1	13·05	65·24
5	F. Brig., B. Battery, R. H. Art., Morar ...	...	...	January 1870, from Sealkote ...	140	1914·3	7·14	85·71
6	XVI Brig., C. Battery, R. Art., Morar ...	...	...	March 1870, from Barrackpore ...	132	2166·7	60·61	83·33
7	XXV Brig., 3 Battery, R. Art., Morar (broken up, 31st October) ...	...	...	December 1868, from Fort William ...	72	1166·7	13·89	...
8	XXIV Brig., 2 Battery, R. Art., Gwalior Fortress ...	...	...	February 1869, from Meean Meer ...	77	1130·0	13·00	39·00
9	108th Regiment, Jhansi, with Detachments of 240 men at Gwalior Fortress and 166 men at Nowgong ...	...	...	November 1870, from Umballa ...	885	2331·1	24·86	38·42
10	XIX Brig., G. Battery, (XXIII, F., from July), R. Art., Nowgong ...	...	...	January 1871, from Jullundur ..	150	2393·3	26·67	93·33
11	1-19th Regiment, Saugor, with Detachment of 257 men at Jubbulpore* (10 months) ...	1857	1857	January 1870, from Rawulpindee ...	714	1408·9	15·41	...†
12	VIII Brig., E. Battery, R. Art., Saugor ...	1868	1868	December 1870, from Fyzabad ...	136	1830·9	...	80·88
13	XXII Brig., 6 Battery, R. Art., Saugor ...	...	...	January 1869, from Meean Meer ...	73	1164·4	...	...
14	VIII Brig., D. Battery, R. Art., Jubbulpore ...	1866	1866	March 1871, from Bareilly ...	135	918·5	22·22	37·04
				REGIMENTS OF AGRA AND CENTRAL INDIA ...	4,290	1877·1	20·28	37·06

* This Detachment was 167 strong from February to June. The Puchmurree Detachment, which was compelled to leave on account of the hutting accommodation being destroyed by the floods, was added in July, making up the Strength to 257. The Regiment left for England in the first week of November.

XXX,—(continued).

and CENTRAL INDIA.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1871.																													
			Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sun-stroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions	980	...	...	45	308	4*	41	187	13	4	...	2	...	1	...	...	6	43	4	12	3	14	71	18	...	29	...	8	103	41	23
	Deaths ...	23	...	...	...	9	8	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	2	...
	Invaliding ..	[illegible]	...	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1
2	Admissions	266	...	...	31	41	1	10	52	13	...	1	5	1	...	...	1	...	2	...	16	2	3	12	7	...	10	...	2	15	33	8
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding...	8	...	...	1	...	...	1	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
3	Admissions	128	...	...	47	23	1	8	11	2	...	...	...	1	...	...	...	...	...	1	7	2	...	5	6	...	3	...	...	2	5	4
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4	Admissions	2,068	...	...	1,156	109	1	61	110	13	5	...	40	6	2	2	6	...	27	5	61	4	50	23	41	37	41	3	6	59	64	53
	Deaths ...	11	...	...	...	6	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1	1
	Invaliding...	55	...	...	24	2	...	5	...	1	...	...	7	1	2	...	...	...	...	1	2	...	5	...	3	...	...	...	...	1	...	1
5	Admissions	268	...	...	77	8	...	13	28	3	...	...	4	...	...	2	2	1	3	...	9	2	7	9	6	...	23	1	3	26	30	11
	Deaths ..	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding...	12	...	...	1	...	...	1	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	3
6	Admissions	286	...	...	92	5	...	9	18	14	...	...	11	...	...	2	...	...	2	1	40	2	5	13	9	2	12	...	4	18	22	5
	Deaths ...	8	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	4	...	...	...	...	...	...	...
	Invaliding...	11	...	...	1	...	...	1	...	2	...	...	4	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	1
7	Admissions	84	...	...	24	12	...	7	9	5	...	...	2	...	...	...	1	...	...	...	5	...	...	1	2	...	6	...	...	4	5	2
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Admissions	87	...	...	23	13	2	2	5	...	...	...	2	1	1	2	...	...	1	...	3	...	2	3	4	1	8	...	1	3	7	3
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
9	Admissions	2,063	1	...	1,294	38	...	53	124	20	1	1	14	6	...	...	10	5	28	6	60	6	16	15	28	2	82	3	9	61	85	57
	Deaths ..	22	1	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	4	...	1	2	...	4	...	...	1	...	...	4	2
	Invaliding ..	34	...	...	...	...	...	2	...	3	...	...	11	...	...	...	2	...	1	2	1	...	...	...	4	...	...	1	...	...	1	6
10	Admissions	359	...	...	112	50	1	36	40	...	...	...	2	...	...	2	3	1	5	...	17	1	...	6	14	2	11	4	5	13	26	8
	Deaths ...	4	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1
	Invaliding ..	14	...	...	...	...	...	2	...	...	...	...	3	...	...	2	...	...	...	1	...	...	...	...	4	...	...	1	...	...	...	1
11	Admissions	1,006	...	...	520	16	...	23	146	...	...	1	15	10	1	1	4	5	4	4	29	4	7	7	41	7	23	2	10	54	52	20
	Deaths ...	11	...	...	...	2	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	2
	Invaliding...	...†	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Admissions	219	...	...	103	34	...	5	17	4	1	...	3	4	...	...	3	...	2	4	6	...	...	1	8	2	19	...	1	14	16	2
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	11	...	...	2	...	...	...	...	1	...	...	1	1	...	1	...	...	...	2	1	...	...	...	1	...	...	...	...	...	...	1
13	Admissions	85	...	...	22	5	...	1	5	3	...	...	...	...	...	...	4	1	2	...	1	1	...	1	6	...	11	...	1	9	9	3
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Admissions	124	...	...	48	6	...	2	28	1	...	...	3	...	...	...	...	1	2	...	...	...	2	6	5	...	5	...	1	5	6	3
	Deaths ...	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
	Invaliding...	5	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1
	Admissions	8,053	1	...	3,594	758	10	261	780	91	11	3	103	29	5	11	34	20	121	25	278	26	108	203	195	53	282	18	51	386	401	202
	Deaths ...	87	1	...	...	21	9	...	...	...	...	...	...	4	3	1	...	...	...	9	...	4	4	...	11	...	...	1	...	...	9	7
	Invaliding...	159	...	...	30	2	...	13	1	8	...	...	36	2	2	3	2	...	1	7	5	...	6	...	20	...	...	2	...	1	2	16

* The extent of the prevalence of Typhoid Fever in the 65th Regiment is under rated in the Returns.
† The 1-19th Regiment took home its Invalids.

TABLE

5.—REGIMENTS of

	REGIMENTS & BATTERIES, & STATION OF 1871.	YEAR OF ARRIVAL		Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
1	F. Brig., E Battery, R. H. Art., Umballa ...	...	...	April 1868, from Peshawur ...	146	1470·5	13·70	61·64
2	20th Hussars, Umballa ...	...	...	March 1870, from Campbellpore ...	443	1316·0	13·54	112·87
3	72nd Regiment, Umballa* (9 months) ...	1871	1871	5th April 1871, from England ...	906	870·9	12·14	28·70
4	VIII Brig., G. Battery, R. Art., Jullundur ...	1868	1868	December 1870, from Cawnpore ...	138	1608·7	21·74	123·19
5	92nd Regiment, Jullundur (Detachments to Umritsur, Bhagsoo, and Road-making in Chumba Hills)	1868	1868	March 1868, from England ...	871	1165·3	16·07	20·67
6	XIX Brig., B. Battery, R. Art., Ferozepore ...	...	...	January 1871, from Campbellpore ...	144	1277·8	20·83	13·89
7	XXII Brig., 5 Battery, R. Art., Ferozepore (10 months)	...	...	January 1870, from Meean Meer ...	71	831·0	28·17	14·08
8	39th Regiment, Ferozepore ...	1869	1869	November 1869, from England ...	926	1112·3	9·72	12·96
9	XIX Brig., C. Battery, R. Art., Mooltan ...	...	...	January 1870, from Meerut .	149	1288·6	20·13	33·56
10	XXV Brig., 2 Battery, R. Art., Mooltan (10 months) ...	...	...	December 1869, from Delhi ...	66	969·7	...	...
11	41st Regiment, Mooltan (Detachments of 100 men to Dera Ismael Khan and to Road-making in the Chumba Hills) ...	1865	1865	November 1870, from Subathoo ..	882	964·0	18·14	51·02
12	A. Brig., E. Battery, R. H. Art., Sealkote ...	1865	1865	February 1870, from Peshawur .	146	1349·3	41·10	47·94
13	5th Lancers, Sealkote ...	1864	1864	February 1870, from Lucknow .	450	862·2	13·33	62·22
14	68th Regiment, Sealkote (Detachment of 145 men to Road-making in Chumba Hills) ...	1865	1865	February 1870, from Allahabad ..	742	1202·2	13·48	64·69
15	XXII Brig., 4 Battery, R. Art., Govindghur (10 months)	...	...	January 1870, from Peshawur .	57	1333·3	17·55	17·55
16	F. Brig., F. Battery, R. H. Art., Meean Meer ...	...	...	March 1868, from Peshawur	144	1458·3	...	20·83
17	VIII Brig., H. Battery, R. Art., Meean Meer ...	1868	1868	January 1870, from Agra	134	1746·3	37·31	67·16
18	XXIV Brig., 5 Battery, R. Art., Meean Meer ...	...	...	April 1869, from Morar ..	80	962·5	25·00	75·00
19	37th Regiment, Meean Meer (Detachments to Fort Lahore and Road-making in Chumba Hills) ...	1867	1867	December 1870, from Shahjehanpore and Moradabad .	843	1376·0	18·98	52·19
20	XXV Brig., 5 Battery, (XXII, 2, from July,) R. Art., Rawulpindee, and Huzara Hills from May to October ..	...	...	April 1869, from Abyssinia .	86	430·2	...	...
21	A. Brig., B. Battery, R. H. Art., Rawulpindee ...	1866	1866	February 1870, from Peshawur ...	153	1973·9	19·61	52·29
22	XIX Brig., E. Battery, R. Art., Rawulpindee ...	...	...	April 1868, from Peshawur	156	2455·1	6·41	83·33
23	36th Regiment, Rawulpindee (Detachment to Road-making in Murree Hills) ...	1864	1864	November 1869, from Peshawur ..	738	1349·1	13·55	52·85
24	38th Regiment, Rawulpindee, (10 months) (Detachment to Road-making in Murree Hills) ...	1857	1857	April 1871, from Peshawur ...	730	2204·5	6·85	...

* Detachments of nearly 200 men were sent to Dugshale and Kussowlie, the selection being made from the young men and boys of the Regiment.

the PUNJAB.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy & Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy & Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
			Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1871.																													
1	Admissions	216	...	1	70	17	1	4	31	8	2	...	1	2	...	1	...	1	...	3	6	1	5	8	12	1	6	...	...	4	21	10
	Deaths ...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	9	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	1	...	...	...	...	3	...	...	...	...	...	...	2
2	Admissions	583	...	...	112	100	...	37	46	3	2	...	21	2	1	4	16	3	3	...	24	4	8	26	22	1	33	2	6	46	41	20
	Deaths ...	6	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	
	Invaliding...	50	...	...	13	...	...	2	...	1	...	...	19	...	...	1	1	...	...	...	1	...	1	...	7	1	...	...	...	1		2
3	Admissions	789	...	...	63	220	4	27	99	8	3	...	26	7	1	7	...	3	34	7	36	2	25	51	18	2	27	1	2	19	26	41
	Deaths ...	11	...	...	...	1	2	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	1	...
	Invaliding...	26	...	...	...	...	...	1	...	...	...	...	...	3	...	3	...	...	...	7	...	...	...	...	4	...	...	...	...	...	1	7
4	Admissions	222	...	...	45	38	...	7	13	4	...	...	18	1	...	1	...	...	4	4	17	5	5	3	14	9	7	...	7	6	10	4
	Deaths ...	3	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding...	17	...	...	7	1	...	...	...	1	...	...	2	...	...	...	...	...	...	2	1	...	...	...	2	...	...	...	...	...	...	1
5	Admissions	1,015	...	...	275	88	1	63	156	10	2	...	24	1	2	2	9	4	22	5	52	2	10	50	42	3	44	1	10	42	55	31
	Deaths ...	11	...	...	...	5	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	1	1	...	3	...	...	...	...	...	1	...
	Invaliding...	18	...	...	...	...	...	...	...	2	...		4	...	...	...	...	...	...	2	...	...	2	...	7	...	...	...	...	...	1	...
6	Admissions	184	...	...	26	13	...	12	28	7	...	...	1	3	...	...	...	4	3	...	8	3	1	10	5	...	5	...	...	13	20	7
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding...	2	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Admissions	59	...	...	13	12	1	2	3	...	...	...	...	1	...	2	...	...	...	...	2	...	...	3	1	1	10	...	...	1	5	2
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
8	Admissions	1,030	...	...	30	321	1	12	181	22	1	...	13	13	...	1	2	4	40	3	44	6	30	52	13	...	73	1	8	56	63	40
	Deaths ...	9	...	...	...	...	1	...	...	...	...	...	...	2	...	1	...	1	...	1	...	...	1	...	...	...	...	1	...	...	1	
	Invaliding...	12	...	...	...	...	...	...	...	1	...	...	1	3	...	...	...	...	...	1	2	...	1	...	...	...	...	...	...	...	...	3
9	Admissions	192	...	...	45	23	...	8	6	4	...	...	3	1	...	1	1	...	2	...	10	3	5	6	22	...	7	1	1	10	22	11
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
	Invaliding...	5	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	2
10	Admissions	64	...	...	27	4	...	3	7	...	...	...	1	...	...	...	2	...	...	...	2	...	2	1	2	...	1	...	...	3	4	5
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Admissions	851	...	...	95	172	...	32	88	10	2	...	11	17	3	3	14	8	16	16	71	22	29	25	45	3	16	2	7	60	42	42
	Deaths ...	16	...	...	...	2	...	...	...	...	...	...	1	2	1	1	...	1	...	2	1	1	...	...	1	...	...	...	...	...	1	2
	Invaliding...	45	...	...	1	2	...	1	...	2	...	...	8	7	...	3	...	...	2	6	...	...	1	...	6	1	...	...	...	...		5
12	Admissions	197	...	...	34	48	1	14	17	2	...	1	1	...	...	...	2	...	3	...	4	...	1	12	8	4	...	...	5	16	22	2
	Deaths ...	6	...	...	...	2	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding...	7	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	...	1	...
13	Admissions	388	...	...	28	98	1	20	28	8	...	...	26	...	...	...	2	1	11	...	11	4	7	12	22	1	15	1	8	17	50	17
	Deaths ...	6	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	...	2	...	...	...	...	...	...	...
	Invaliding...	28	...	...	...	1	...	2	...	...	...	...	10	...	1	...	...	...	1	...	...	...	...	...	5	...	...	...	...	...	2	6
14	Admissions	892	...	1	295	25	1	32	154	8	...	1	13	3	1	7	6	1	15	1	32	7	16	43	62	2	20	5	19	48	55	29
	Deaths ...	10	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	1	1	...	1	...	...	1	...	...	1	
	Invaliding...	48	...	...	3	...	...	...	1	...	...	...	15	1	...	1	1	...	...	...	1	...	2	...	11	...	...	...	1	2	1	8
15	Admissions	76	...	...	16	13	1	2	24	...	...	...	...	...	...	...	...	1	...	...	1	1	2	1	3	...	...	1	...	1	8	1
	Deaths ...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ..	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
16	Admissions	210	...	...	26	24	...	16	9	1	1	...	1	2	...	...	1	...	4	...	18	5	5	7	9	1	11	...	1	21	26	21
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ..	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
17	Admissions	234	...	...	20	83	...	20	9	1	...	...	4	3	1	...	4	1	...	...	13	2		11	7	2	8	...	2	5	24	11
	Deaths ...	5	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	
	Invaliding...	9	...	...	1	...	...	2	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
18	Admissions	77	...	...	10	2	...	8	4	1	...	1	5	1	...	...	1	...	...	...	6	...	5	6	4	...	3	...	...	3	9	8
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
	Invaliding...	6	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
19	Admissions	1,160	...	1	311	12	2	56	147	20	1	...	20	12	7	3	6	3	33	6	76	7	32	40	72	1	61	1	9	65	87	51
	Deaths ...	16	...	...	...	...	...	...	...	1	...	...	...	1	3	...	...	1	...	3	...	...	...	...	4	...	...	...	...	...	3	...
	Invaliding...	44	...	...	1	...	...	...	1	3	...	...	5	5	1	...	...	...	...	3	1	...	...	...	8	...	1	...	...	3	2	10
20	Admissions	37	...	...	7	2	...	3	11	...	...	...	...	...	...	...	...	...	1	...	4	...	...	1	2	...	3	...	...	2	1	...
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	Admissions	302	...	2	168	3	1	7	28	6	...	...	6	...	...	...	1	...	1	...	15	1	...	10	6	4	2	...	1	13	18	9
	Deaths ...	3	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding...	8	...	...	2	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...
22	Admissions	383	...	...	178	3	...	11	36	4	...	...	1	1	...	...	...	...	1	...	22	...	2	12	29	3	12	6	3	28	26	5
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Invaliding...	13	...	...	...	...	...	...	...	1	...	...	3	...	...	...	...	...	...	...	...	...	...	...	6	...	...	1	1	1	...	
23	Admissions	989	...	...	291	148	1	37	105	39	5	...	9	2	...	6	4	2	6	5	31	5	13	34	47	7	39	1	10	45	78	20
	Deaths ..	10	...	...	...	2	1	...	...	...	...	...	...	3	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	...		1
	Invaliding...	39	...	...	8	...	...	2	1	6	...	...	7	1	...	2	...	...	...	3	...	...	...	...	9	...	...	...	...	...	...	
24	Admissions	1,075	...	...	1,135	3	...	52	82	17	1	1	8	3	1	2	...	3	17	...	113	4	25	32	28	19	19	...	4	31	55	20
	Deaths ...	5	...	...	...	...	...	...	...		...	...	...	2	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...		...	...
	Invaliding ..	18*	...	...	...	...	...	2	...	5	...	...	2	...	...	...	...	...	1	1	1	...	...	...	6	...	...	...	...	...	...	...

* The men who would have been recommended for change of climate went home with the Regiment.

TABLE

REGIMENTS of

	REGIMENTS & BATTERIES, & STATION OF 1871.	YEAR OF ARRIVAL		Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
25	A. Brigade, D. Battery, R. H. Art., Campbellpore ...	1865	1865	April 1871, from Peshawur ...	141	3659·6	21·28	78·01
26	XXIV Brigade, 6 Battery, R. Art, Attock ...	...	...	November 1869, from Govindghur ...	84	1333·3	11·90	35·71
27	1-5th Regiment, Nowshera, (Detachment to Attock, and to Road-making in Murree Hills) ...	1867	1867	January 1870, from Ferozepore	892	2876·7	32·51	39·24
28	A. Brigade, A. Battery, R. H. Art., Peshawur* ...	1866	1866	January 1870, from Meerut ...	143	2853·1	13·99	104·90
29	XXII Brigade, B. Battery (XX, F., from July), R. Art., Peshawur* ...	...	..	December 1870, from Ferozepore ..	145	2020·7	27·59	55·18
30	XXV Brigade, 4 Battery, R. Art., Peshawur,* (10 months)	...	...	November 1869, from Attock ...	68	1779·4	14·71	...
31	1-6th Regiment, Peshawur* ...	1868	1868	April 1871, from Rawulpindee ...	859	1041·4	18·63	29·10
32	2-60th Regiment, Peshawur* ...	1867	1867	December 1870, from Seetapore and Benares	909	1739·7	22·02	46·05
				REGIMENTS OF THE PUNJAB ..	12,207	1555·6	17·37	45·22

6.—REGIMENTS cantoned during

1	XXIV Brigade, 4 Battery, R. Art., Darjeeling ..	...	...	December 1869, from Allahabad ..	72	1083·3	...	69·45
2	2-1st Regiment, Wing, Raneekhet ...	1866	1870	† † †	370	1805·9	23·94	*
3	55th Regiment, Chuckrata ..	1864	1864	May 1869, from Lucknow ...	870	678·2	9·20	22·99
4	85th Regiment, Dugshale ...	1868	1868	October 1870, from Meean Meer ...	918	1251·6	8·71	26·13
5	2-12th Regiment, Subathoo ...	1864	1864	February 1871, from Jubbulpore ..	840	914·3	11·90	35·71
6	XXII Brigade, A. Battery, R. Art., Jutogh (10 months)	...	...	March 1869, from Allahabad ...	88	625·0	...	45·45
				HILL STATIONS OF THE BENGAL PRESIDENCY ...	3,157	1051·3	11·09	29·85

7.—INVALID GARRISON, ROAD-MAKING

1	Invalid Garrison, Chunar	27	1111·1	111·11	...
2	Road-making Parties, Chumba and Murree Hills, May to October	1,127	578·5	3·55	...
3	Detachment 79th Regiment, Puchmurree, March to September‡	99	1323·2	30·30	...
4	Detachments from Peshawur, at Cherat, from July to October	860	755·8	11·63	...

* Upwards of 860 men were withdrawn from Peshawur and stationed at Cherat from July to October.

† The Road-making party of 1870, 207 strong, was supplemented by 254 men from Head Quarters.

‡ The Detachment of the 1-19th Regiment which was sent from Saugor to Puchmurree, was withdrawn at the end of June, in consequence of the hutting accommodation having been destroyed by the burst of the monsoon.

the PUNJAB,—(continued).

CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1871.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sun-stroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
25	Admissions	516	...	...	310	21	...	23	9	10	1	...	9	3	...	2	3	...	7	...	25	...	...	8	14	5	11	...	1	17	31	6
	Deaths ...	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
	Invaliding...	11	...	...	...	...	...	1	...	...	...	...	5	2	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
26	Admissions	112	...	...	42	2	...	5	21	4	...	...	...	...	2	...	1	2	1	...	2	1	2	4	1	2	2	...	...	5	9	4
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding...	3	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
27	Admissions	2,566	...	1	1640	138	3	75	138	25	11	...	16	5	5	6	2	3	6	5	130	15	15	61	20	15	36	1	12	39	57	66
	Deaths ...	29	...	...	...	4	1	...	...	...	1	...	...	2	2	1	...	...	...	1	...	1	...	...	1	...	...	...	...	...	2	1
	Invaliding...	35	...	...	9	...	...	4	...	5	...	...	4	2	...	...	...	...	...	3	...	...	...	...	4	...	...	...	1	...	...	3
28	Admissions	408	...	...	180	63	5	10	7	4	3	...	8	4	2	3	...	1	1	4	28	2	3	10	3	6	9	...	3	14	19	12
	Deaths ...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	15	...	...	...	...	...	...	...	1	...	...	3	3	...	1	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	3
29	Admissions	293	...	...	87	49	3	2	18	2	1	...	10	3	...	1	...	2	1	...	15	10	3	6	4	...	14	...	1	18	26	17
	Deaths ...	4	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding...	8	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2
30	Admissions	121	...	...	36	14	...	2	11	1	...	...	...	...	1	1	1	...	1	...	7	3	1	7	7	2	8	...	3	6	6	3
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	Admissions	1,410	...	...	245	425	7	36	135	5	...	...	25	5	2	2	2	2	11	6	66	4	24	117	49	2	45	2	12	89	45	47
	Deaths ...	16	...	...	...	1	4	...	...	...	...	...	...	2	1	...	...	...	...	1	1	1	1	...	3	...	...	...	...	...	1	...
	Invaliding...	25	...	...	...	...	...	4	...	1	...	...	6	...	...	1	...	...	1	1	...	...	...	...	4	...	...	...	...	1	1	5
32	Admissions	1,738	...	...	585	397	8	32	136	21	2	...	14	7	3	6	1	2	27	1	46	3	36	91	70	2	33	1	9	85	80	31
	Deaths ...	22	...	...	...	8	6	...	...	...	...	...	...	4	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	2
	Invaliding...	46	...	...	...	...	...	4	...	5	...	...	10	3	1	3	...	...	...	2	4	...	...	...	9	...	...	...	...	2	...	3
	Admissions	18,989	...	6	6,457	2581	42	670	1787	264	38	4	294	102	32	61	81	51	271	66	941	122	314	775	662	98	580	27	153	858	1059	593
	Deaths ...	212	...	...	...	33	22	...	...	2	1	...	2	29	13	4	...	6	...	15	2	23	7	...	21	1	...	3	...	...	19	9
	Invaliding...	552	...	...	45	4	...	27	3	36	...	...	120	35	3	17	2	...	5	35	11	...	10	...	100	5	1	1	3	10	9	70

the year at HILL STATIONS.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sun-stroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
1	Admissions	78	...	...	8	...	...	3	20	1	...	...	2	2	...	3	...	...	...	...	1	1	...	5	5	...	4	1	3	2	14	3
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding...	5	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	1	1
2	Admissions	670	...	...	59	27	...	40	101	6	2	...	15	3	...	1	20	2	11	3	60	8	18	95	34	..	18	...	15	53	37	43
	Deaths ...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	3	1	2	...	...	...	...	...	1	..
	Invaliding...	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Admissions	590	...	...	27	51	...	40	55	19	2	...	2	11	1	3	3	3	6	7	82	17	16	35	15	...	37	2	17	37	80	22
	Deaths ...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	1	...	...	3	..
	Invaliding...	20	...	...	...	...	...	1	2	...	...	...	...	3	...	...	1	...	1	2	1	...	1	1	1	...	2	1	...	...	...	3
4	Admissions	1,149	...	...	321	4	...	119	261	10	18	...	5	2	...	8	1	2	8	6	94	8	15	31	4	4	25	...	18	72	69	49
	Deaths ...	8	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	2	...	3	...	...	...	...	...	...	...	...	..	..
	Invaliding...	24	...	...	...	...	...	4	...	...	...	...	3	2	...	...	...	...	1	6	1	1	...	...	...	1	...	...	...	...	1	4
5	Admissions	768	...	...	190	4	1	41	108	6	4	...	10	6	...	5	1	2	4	1	44	3	26	73	56	7	18	2	10	46	77	28
	Deaths ...	10	...	...	...	1	1	...	..	...	...	...	...	3	...	...	...	...	...	1	...	..	2	1	2	...	...	..	...	...	..	...
	Invaliding...	30	...	...	...	...	...	2	1	1	...	...	2	5	...	1	...	...	..	1	...	...	2	1	4	...	...	1	...	...	1	8
6	Admissions	55	...	...	7	3	...	3	11	...	...	...	2	2	...	1	...	...	...	2	1	...	1	2	3	1	4	...	...	1	5	6
	Deaths ...	...	...	...	...	...	...	..	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	..	...	..	...	..	..	...
	Invaliding...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	..	...	...	1	1
	Admissions	3,319	...	...	612	89	1	255	551	42	26	...	36	25	1	16	25	9	29	19	282	37	76	241	117	13	106	5	63	211	282	151
	Deaths ...	35	...	...	...	1	1	...	...	...	...	1	...	4	...	...	...	...	..	6	...	6	5	2	4	..	...	1	..	.	4	...
	Invaliding...	83	...	...	...	...	...	7	3	1	...	...	6	11	...	1	1	...	2	9	2	1	3	2	7	1	2	3	...	..	4	17

PARTIES, and PUCHMURREE and CHERAT SANITARIA.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sun-stroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
1	Admissions	30	...	...	7	4	...	4	...	...	...	...	...	...	...	...	...	...	...	2	1	...	..	2	...	1	1	1	...	1	1	5
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	..
2	Admissions	652	...	...	229	21	...	35	83	...	...	...	...	2	...	...	...	...	6	...	14	1	17	52	25	1	...	...	...	28	45	93
	Deaths ...	4	...	...	...	1	...	...	...	...	...	...	...	1	...	...	..	...	...	...	...	1	...	...	1	...	...	...	...	...	...	..
3	Admissions	131	...	...	39	8	...	4	45	...	...	...	1	...	...	...	1	...	1	...	...	1	5	6	1		1	...	1	9	4	5
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	...	2	...	...	...	...	...	...	...	...	1
4	Admissions	650	...	..	103	159	13	7	63	...	...	...	...	...	1	...	...	...	5	...	23	...	19	11	22	..	...	..	...	35	21	61
	Deaths ...	10	...	..	...	2	5	...	...	...	...	...	...	...	...	...	...	...	..	..	1	...	1	..	1	..	...	...	...	...	.	...

* For whole Regiment under Head Quarters Wing.

TABLE

8.— *CONVALESCENT*

	CONVALESCENT DEPOTS.	Period of Occupation.	Average Strength during the period of occupation.	Admission-rate of Season 1871, per 1,000 of Strength.	Loss per 1,000	
					By Deaths.	By Invaliding.
1	Darjeeling	Seven months, May to November ...	115	1400·0	26·09	...
2	Nynee Tal	Ten months, (excluding February and March) ...	241	2298·8	12·45	149·38
3	Landour	Seven months, April to October ...	217	1036·9	9·22	41·48
4	Kussowlie	Seven months, April to October ...	637	1009·4	14·13	166·41
5	Dalhousie	Seven months, April to October. ...	394	1294·4	20·30	...
6	Murree	Six months, May to October ...	584	890·4	8·58	...
		Convalescent Depôts of the Bengal Presidency ...	2,275*	1148·0	13·19	...
		European Army of the Bengal Presidency ...	35,071	1481·4†	17·59†	47·53‡

* The strength present during the season of full occupation. † See note prefixed to this Table. ‡ See note appended to Table XXVIII.

ANNUAL RELIEF OF THE

ROYAL ARTILLERY.

A. Brigade	A. Battery	From	Peshawur	To Meean Meer ...	... Arrived	February	1872.
	C. Battery	„	Meerut	„ Peshawur ...	... Arrived	January	1872.
F. Brigade	A. Battery	„	Benares	„ Lucknow ...	... Arrived	February	1872.
	C. Battery	„	Lucknow	„ Umballa ...	... Arrived	March	1872.
	E. Battery	„	Umballa	„ Meerut ...	... Arrived	February	1872.
	F. Battery	„	Meean Meer	„ Umballa ...	... Arrived	November	1871.
5th Brigade	3. Battery	„	Toungoo	„ Darjeeling ...	... Arrived	December	1871.
8th Brigade	D. Battery	„	Jubbulpore	„ Benares ...	... Arrived	February	1872.
13th Brigade	Head Quarters	„	England	„ Meean Meer ...	... Arrived	November	1871.
	1. Battery	„	England	„ Rawulpindee and Huzara	... Arrived	December	1871.
	2. Battery	„	England	„ Fort William ...	... Arrived	November	1871.
	3. Battery	„	England	„ Ferozepore ...	... Arrived	December	1871.
	4. Battery	„	England	„ Umritsur ...	... Arrived	November	1871.
	5. Battery	„	England	„ Attock ...	... Arrived	January	1872.
	6. Battery	„	England	„ Jutogh ...	... Arrived	March	1872.
	7. Battery	„	England	„ Meean Meer ...	... Arrived	November	1871.
16th Brigade	D. Battery	„	Allahabad	„ Rawulpindee ...	... Arrived	March	1872.
19th Brigade	E. Battery	„	Rawulpindee	„ Allahabad ...	... Arrived	March	1872.
22nd Brigade	......	„	Bengal Presidency	„ England ...	... Marched	November	1871.
24th Brigade	1. Battery	„	Delhi	„ Morar	... Arrived	November	1871.
	2. Battery	„	Morar	„ Delhi	... Arrived	February	1872.

ANNUAL RELIEF OF THE

ROYAL ARTILLERY.

D. Brigade	A. Battery	From	Kamptee	To Secunderabad ...	... Arrived	January	1872.
	B. Battery	„	Bellary	„ Bangalore ...	... Arrived	December	1871.
5th Brigade	1. Battery	„	St. Thomas Mount	„ Cannanore ...	... Arrived	November	1871.
	2. Battery	„	Madras	„ Rangoon ...	... Arrived	December	1871.
	3. Battery	„	Toungoo	„ Darjeeling ...	... Arrived	December	1871.
	4. Battery	„	Rangoon	„ Toungoo ...	... Arrived	November	1871.
	5. Battery	„	Rangoon	„ Secunderabad ...	... Arrived	February	1872.
	6. Battery	„	St. Thomas Mount	„ Rangoon ...	... Arrived	January	1872.
	7. Battery	„	Bellary	„ Madras ...	... Arrived	December	1871.
6th Brigade	7. Battery	„	Secunderabad	„ St. Thomas Mount	... Arrived	February	1872.
20th Brigade	E. Battery	„	Cannanore	„ Bangalore ...	... Arrived	December	1871.
23rd Brigade	D. Battery	„	Bangalore	„ Bellary ...	... Arrived	December	1871.

ANNUAL RELIEF OF THE

ROYAL ARTILLERY.

9th Brigade	B. Battery	From	Kirkee	To Kurrachee ...	... Arrived	March	1872.
	F. Battery	„	Ahmedabad	„ Kirkee ...	... Arrived	March	1872.
18th Brigade	A. Battery	„	Ahmedabad	„ Belgaum ...	... Arrived	March	1872.
	B. Battery	„	Kurrachee	„ Hyderabad ...	... Arrived	March	1872.
	C. Battery	„	Belgaum	„ Ahmedabad ...	... Arrived	March	1872.

XXX,—(concluded).

DEPOTS.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anaemia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
			Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1871.																													
1	Admissions	161	...	...	29	9	1	8	8	4	...	...	7	2	...	4	3	...	3	1	22	...	2	6	13	4	10	...	2	5	12	6
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	...	...	..	...	...	...	...	. .
	Invaliding...	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
2	Admissions	554	...	...	142	12	2	26	40	26	2	...	26	5	1	2	5	...	9	18	37	2	15	23	39	3	29	5	5	27	22	22
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	..	2	1	...	...	.	...	..	...	...	...	..	...	...	...	. .	..	...		
	Invaliding...	36	...	...	...	...	...	1	...	3	...	...	14	1	...	1	...	...	1	6	...	...	...	...	3	1	..	1	...	...	...	4
3	Admissions	225	...	...	55	2	...	7	28	20	...	...	1	1	1	...	2	...	2	6	12	2	8	8	20	4	6	2	1	14	5	9
	Deaths ...	2	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	.	...	1	...	..	..	...	1	...	...	...	...	...	...	...
	Invaliding...	9	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	3	...	...	1	1	1	...	. .	...	...	...	1	...
4	Admissions	643	...	...	148	46	...	48	51	14	11	...	36	2	1	3	5	4	8	8	30	10	5	63	44	1	33	1	5	13	17	37
	Deaths ...	9	...	...	...	2	...	. .	...	...	...	...	. .	...	1	...	...	..	...	1	...	3	...	. .	1	...	...	..	...	...	1	...
	Invaliding...	108	...	...	12	...	...	9	...	2	...	...	60	3	...	1	...	..	1	4	...	...	..	2	6	1	...	...	...	1	2	3
5	Admissions	510	...	...	124	31	...	23	28	6	1	1	37	5	...	3	2	3	5	2	32	3	9	66	26	3	13	2	4	18	43	20
	Deaths ...	8	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	1	...	1	...	...	2	...	...	...	..	...	1	1
	Invaliding...	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	. .	...	...	..	...	...	...	...	..	...
6	Admissions	520	...	...	194	13	...	20	58	27	3	...	16	5	...	5	1	2	1	3	26	4	8	30	31	6	12	2	4	14	18	17
	Deaths ...	5	...	...	...	2	...	...	...	..	...	...	...	1	...	...	...	...	...	..	...	1	...	...	1	.	...	...	...	...	. .	.
	Invaliding...	*	...	...	...	...	...	...	...	..	...	...	...	...	..	...	...	..	.	...	...	...	. .	...	...	...	...	...	...	...	...	..
	Admissions	2,613	...	..	692	113	3	132	222	97	17	1	123	20	3	17	18	9	28	38	168	21	47	196	182	21	103	12	21	91	117	101
	Deaths ...	30	...	...	...	4	...	...		...	...	...	1	5	2	...	...	...	...	3	1	5	1	...	5	. .	...	...	...	...	2	1
	Admissions ...	51,054	42	10	14,708	5809	131	1957	6334	849	105	14	825	306	61	172	251	129†	840	243	2531	341	1156	2206	2073	274	2,033	98	540	2015	3087	1914
	Deaths	617	25	1	...	75	63	1	...	2	3	1	4	56	28	11	...	9	...	57	4	39	40	4	97	1	...	7	...	..	61	28
	Invaliding	1,562	...	...	91	8	1	88	11	100	...	...	295	123	7	41	11	...	20	120	41	1	55	14	252	11	4	12	8	18	34	196

* No men were invalided from these Depôts in 1871. The Invaliding Committees of the year sat after the return of the men to their Regiments.

† The number of cases of drunkenness in the Bengal Army in 1871 was 11,750. Drunkenness is not recognised in the Returns as a cause of Admission into Hospital.

ARMY OF BENGAL, 1871-72.

ROYAL ARTILLERY,—*continued*.

24th Brigade	3. Battery	From Lucknow	To Peshawur ...	... Arrived	November	1871.
	4. Battery	„ Darjeeling	„ Gwalior Fortress	... Arrived	February	1872.
	5. Battery	„ Meean Meer	„ Agra	... Arrived	December	1871.
	6. Battery	„ Attock	„ Lucknow ...	... Arrived	February	1872.

25th Brigade was broken up from October 1871.

INFANTRY.

1-5th Regiment	From Nowshera	To Bareilly ...	... Arrived	February	1872.
1-8th Regiment	„ Nusseerabad	„ Cawnpore ...	... Arrived	March	1872.
1-14th Regiment	„ Cawnpore	„ Fort William ...	... Arrived	November	1871.
1-19th Regiment	„ Saugor	„ England ...	... Marched	November	1871.
2-19th Regiment	„ Fort William	„ Allahabad ...	... Arrived	November	1871.
2-25th Regiment	„ Bareilly	„ Saugor and Jubbulpore	... Arrived	December	1871.
38th Regiment	„ Rawulpindee	„ England ...	... Marched	November	1871.
54th Regiment	„ England	„ Jullundur ...	. . Arrived	December	1871.
55th Regiment	„ Chuckrata	„ Peshawur ...	... Arrived	January	1872.
2-60th Regiment	„ Peshawur	„ Nowshera ...	... Arrived	January	1872.
70th Regiment	„ England	„ Rawulpindee ...	... Arrived	December	1871.
92nd Regiment	„ Jullundur	„ Chuckrata ...	... Arrived	March	1872.
104th Regiment	„ Allahabad	„ England	... Marched	November	1871.

ARMY OF MADRAS, 1871-72.

CAVALRY.

10th Lancers	From Bangalore	To Secunderabad ...	... Arrived	January	1872.
18th Hussars	„ Secunderabad	„ Bangalore ...	... Arrived	January	1872.

INFANTRY.

2-21st Regiment	From Thayetmyo and Toungoo	To Madras and Trichinopoly	... Arrived	February	1872.
44th Regiment	„ England	„ Kamptee ...	... Arrived	November	1871.
45th Regiment	„ Madras	„ Thayetmyo and Toungoo	... Arrived	February	1872.
48th Regiment	„ Malta	„ Bellary ...	... Arrived	March	1872.
3-60th Regiment	„ Bellary	„ Aden ...	... Marched	November	1871.
79th Regiment	„ Kamptee	„ England ...	... Marched	October	1871.

ARMY OF BOMBAY, 1871-72.

INFANTRY.

1-8th Regiment	From Nusseerabad	To Cawnpore ...	... Arrived	March	1872.
40th Regiment	„ Poona	„ Mhow ...	... Arrived	December	1871.
59th Regiment	„ Mhow	„ Nusseerabad ...	... Arrived	January	1872.
3-60th Regiment	„ Bellary	„ Aden ...	... Arrived	November	1871.
68th Regiment	„ England	„ Poona ...	... Arrived	March	1872.
3rd Battalion, Rifle Brigade, 1871.	„ Aden	„ England ...	... Sailed	December	1871.

EUROPEAN

XX

ABSTRACT of the RETURNS showing the ADMISSIONS, DEATHS and

SEE NOTE PER

1.—*REGIMENTS of RAJPOOTANA,*

	REGIMENTS & BATTERIES & STATION OF 1871.	Date of Arrival in India.	Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Average Strength.	Loss per 1,000.	
						By Deaths.	By Invaliding.
1	IX Brig., D. Battery, R. Art., Nusseerabad	November 1869	January 1870, from England	128*	2773·4	15·63	54·69
2	1-8th Regiment, Nusseerabad, with Detachment of 238 men at Neemuch	November 1868	January 1870, from Poona	874	2400·5	16·02	57·21
3	XVIII Brig., D. Battery, R. Art., Neemuch	...	January 1871, from Kirkee	144	2027·8	13·89	20·83
4	E. Brig., B. Battery, (D. Brig., E. Battery, from July), R. H. Art., Mhow	...	December 1870, from Kirkee	170	1829·4	5·88	52·94
5	VI Brig., 1 Battery, R. Art., Mhow	February 1869	December 1869, from Deolalee	79	1316·4	25·32	37·97
6	15th Hussars, Mhow	December 1869	December 1869, from England	483	1927·5	10·35	18·63
7	50th Regiment, Mhow (Detachments of 124 men at Indore and 109 men at Neemuch)	March 1869	February 1870, from Poona	927	1812·3	12·94	24·81
8	IX Brig., E Battery, R. Art., Deesa	November 1869	March 1871, from Kirkee	140	1764·3	35·71	35·71
9	108th Regiment, Deesa (Detachment at Mt. Aboo, varying in strength from 75 to 200 men	†	January 1871, from Belgaum	900	1390·0	22·22	23·33
10	IX Brig., F. Battery, R. Art., Ahmedabad‡	November 1869	November 1869, from England	144	2361·1	41·67	69·44
11	XVIII Brig., A. Battery, R. Art., Ahmedabad‡	...	January 1869, from Kurrachee	147	2013·6	13·61	54·42
12	XVIII Brig., B. Battery, R. Art., Kurrachee	...	January 1869, from Ahmedabad	145	1482·7	13·80	55·17
13	66th Regiment, Kurrachee, with Detachment of 270 men at Hyderabad	April 1870	April 1870, from England	914	1597·4	10·41	8·75
14	VI Brig., 4 Battery, R. Art., Aden	February 1869	February 1871, from Bombay	75	1520·0	13·33	106·67
15	VI Brig., 5 Battery, R. Art., Aden	February 1869	February 1871, from Bombay	77	1350·6	13·00	38·96
16	3rd Battalion Rifle Brigade, Aden, (11 Months)	1857	December 1870, from Dinapore	586	914·7	8·53	5·12
	REGIMENTS OF RAJPOOTANA, MALWA, SCINDE AND ADEN			5,901	1751·2	16·10	30·16

2.—*REGIMENTS of the*

1	VI Brig., 2 Battery, R. Art., Bombay	February 1869	February 1871, from Aden	78	846·2	...	38·46
2	VI Brig., 3 Battery, R. Art., Bombay	February 1869	February 1871, from Aden	71	788·7	14·08	28·17
3	VI Brig., 6 Battery, R. Art., Bombay	February 1869	November 1870, from Poona	80	1100·0	25·00	112·50

---

* Excluding a detachment of 17 men at Taraghur. † Transferred from the Madras Presidency in November 1867.

‡ These Batteries furnished small detachments to Baroda.

TROOPS, 1871.

XI.

INVALIDING of each REGIMENT of the ARMIES of MADRAS and BOMBAY for the YEAR.

FIXED TO TABLE XXX.

MALWA, SCINDE and ADEN.

Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1871.

	Total Admissions and Loss of the Year by Death and Invaliding.	Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 355	...	...	171	...	...	2	33	5	...	...	6	...	...	1	...	5	2	...	4	2	8	16	20	10	7	...	...	32	21	10
	Deaths ... 2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
	Invaliding ... 7	...	...	...	...	...	...	...	1	...	...	4	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
2	Admissions 2,098	...	...	943	28	10	85	204	34	...	...	60	9	4	7	32	7	39	7	73	4	35	70	78	19	70	4	5	93	93	85
	Deaths ... 14	...	...	...	1	7	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...
	Invaliding ... 50	...	...	4	...	...	2	...	...	...	...	14	4	...	2	2	...	...	4	...	...	1	...	9	...	...	...	...	...	1	7
3	Admissions 292	...	...	74	22	3	10	58	11	...	...	4	...	1	...	...	3	4	...	13	1	8	3	14	1	7	...	5	16	32	3
	Deaths ... 2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding ... 3	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
4	Admissions 311	...	...	123	5	...	19	39	5	...	...	9	3	...	...	3	...	3	2	10	2	1	8	8	1	3	...	2	31	33	1
	Deaths ... 1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 9	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	1	...	...	...	...	...	1
5	Admissions 104	...	...	47	2	...	4	8	...	...	...	3	7	1	1	2	...	...	...	6	...	...	6	3	...	1	...	1	4	6	2
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 3	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Admissions 931	...	...	515	15	...	20	79	3	..	...	12	...	...	1	...	2	26	2	16	...	...	41	26	3	24	2	11	83	39	11
	Deaths ... 5	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	1	...	...	1	...
	Invaliding ... 9	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	1	..	...	...	...	1	..	...	...	...	...	...	2
7	Admissions 1,680	1	...	862	103	4	42	243	25	...	1	9	5	2	...	10	2	15	6	56	6	29	62	15	2	25	1	6	50	60	38
	Deaths ... 12	1	...	...	1	2	...	...	...	...	1	...	1	...	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	2	1
	Invaliding ... 23	...	...	...	...	...	...	...	2	...	...	2	1	...	...	...	...	...	4	3	...	1	...	...	...	...	...	...	...	3	7
8	Admissions 247	...	...	42	42	...	4	20	1	...	...	4	1	2	...	8	1	5	1	9	1	11	9	20	...	6	...	..	20	16	15
	Deaths ... 5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	..	...
	Invaliding ... 5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	1	...	...	...	...	...	...	1
9	Admissions 1,251	...	...	398	147	...	26	148	25	1	...	8	12	14	...	...	3	21	4	101	10	18	30	66	...	45	4	4	50	43	73
	Deaths ... 20	...	...	...	...	...	...	...	...	...	...	...	6	3	...	...	2	...	1	...	...	1	1	2	...	...	...	...	...	2	2
	Invaliding ... 21	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...	...	1	3	3	...	...	...	5	...	...	...	...	...	1	5
10	Admissions 340	...	...	78	68	...	6	12	1	1	...	18	1	...	...	4	1	5	1	11	1	1	19	7	...	35	...	4	27	29	10
	Deaths ... 6	...	...	...	1	2	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 10	...	...	..	1	...	...	...	...	...	...	1	...	...	...	1	...	...	2	1	...	...	...	1	...	...	...	...	...	...	3
11	Admissions 296	...	...	50	56	...	20	8	1	...	...	10	...	1	...	1	...	2	3	7	...	1	24	4	...	22	...	1	22	33	30
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 8	...	...	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	3
12	Admissions 215	...	...	44	11	...	15	29	6	...	...	2	...	...	3	...	2	5	...	6	...	6	9	5	...	7	1	1	11	44	8
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding ... 8	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	1	...	...	2	...	...	1	1
13	Admissions 1,460	...	...	462	166	6	27	112	23	5	2	11	3	2	3	10	12	41	4	48	...	37	137	10	...	76	1	1	86	86	80
	Deaths ... 15	...	...	...	...	3	...	...	...	...	...	...	1	2	...	...	1	...	2	...	...	1	...	1	...	...	1	...	...	2	1
	Invaliding ... 8	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	4
14	Admissions 114	...	...	4	13	...	10	3	1	...	...	5	1	1	...	...	...	1	2	...	...	3	4	9	1	5	1	3	10	7	30*
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	Invaliding ... 8	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	3	...	...	...	...	2	...	...	...	...	...	...	1
15	Admissions 104	...	...	7	18	...	3	1	3	...	...	...	2	...	...	...	...	...	...	2	2	4	6	9	...	7	...	...	12	7	21†
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 3	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...
16	Admissions 536	...	...	23	38	...	39	12	16	1	...	5	1	3	2	...	1	4	2	14	1	26	18	24	1	35	...	9	32	13	216‡
	Deaths ... 5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	1	...	1	...	...	...	...	...	...	...
	Invaliding ... 3	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Admissions 10,334	1	...	3843	734	23	332	1009	160	8	3	166	45	31	18	70	39	173	34	376	30	188	462	327	38	375	14	53	588	562	632
	Deaths ... 95	1	...	1	4	15	...	...	...	...	1	...	10	11	3	...	4	...	7	...	1	8	2	10	...	...	2	...	...	11	4
	Invaliding ... 178	...	...	5	1	...	8	...	6	...	...	33	8	...	3	3	...	2	19	11	...	4	...	30	2	..	2	...	...	6	35

DECCAN and NAGPORE §

	Total Admissions and Loss of the Year by Death and Invaliding.	Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 66	...	...	7	4	...	1	4	...	...	...	6	2	...	1	...	...	...	...	5	1	...	1	3	2	5	...	1	12	8	3
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 3	...	...	...	...	...	...	...	...	...	...	...	1	...	..	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
2	Admissions 56	..	...	5	5	...	2	2	2	...	...	..	3	1	...	1	...	...	...	3	...	.	1	2	...	8	...	1	7	7	6
	Deaths ... 1	...	..	...	...	...	...	...	...	...	...	.	...	..	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..	...
	Invaliding ... 2	...	...	...	...	...	...	...	1	..	...	..	1	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	.	...	...
3	Admissions 88	...	...	5	7	...	1	...	4	1	1	4	4	...	2	...	3	...	..	4	...	2	2	15	2	8	...	...	9	12	2
	Deaths ... 2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	1	...	...	...	..	...	...	...
	Invaliding ... 9	...	...	...	...	...	...	...	1	...	...	...	2	...	1	...	...	1	...	1	...	...	...	1	...	...	...	...	...	1	1

* 18 Dengue Fever. † 11 Dengue Fever. ‡ 193 Dengue Fever. § Including the Garrison of Bombay.

TABLE

REGIMENTS of the DECCAN

	REGIMENTS & BATTERIES & STATION OF 1871.	Date of Arrival in India.	Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Average Strength.	Loss per 1,000.	
						By Deaths.	By Invaliding.
4	E. Brig., A. Battery, (D. Brig., C. Battery from July), R. H. Art., Ahmednuggur ...	...	January 1870, from Kirkee ...	162	1530·9	...	55·56
5	3rd Hussars, Ahmednuggur ...	December 1868 ...	December 1868, from England ...	491	1242·4	12·22	42·77
6	IX Brig., B. Battery, R. Art., Kirkee * ...	December 1869 ...	December 1870 ...	136	1125·0	14·71	51·47
7	XVIII Brig., E. Battery, R. Art., Kirkee ...	...	February 1870, from Sholapore ...	142	1183·1	...	35·21
8	XVIII Brig., F. Battery, R. Art., Kirkee ...	...	March 1871, from Neemuch ...	147	1483·0	27·21	13·60
9	49th Regiment, Poona* ...	December 1865 ...	December 1870, from Deesa ...	907	1273·4	16·54	12·12
10	56th Regiment, Poona (9 months) ..	April 1871 ...	April 1871, from England ...	898	1526·7	4·45	17·82
11	83rd Regiment, Poona ...	April 1870 ...	April 1870, from Gibraltar ...	909	912·0	11·00	34·10
12	XVIII Brig., C. Battery, R. Art., Belgaum ...	...	December 1866, from Hyderabad ...	151	827·8	6·62	39·74
13	1-2nd Regiment, Belgaum ..	October 1866 ...	, from Poona ...	891	805·8	8·98	31·43
14	D. Brig., A. Battery, R. H. Art., Kamptee ...	...	December 1868, from Bangalore ...	154	1571·4	12·99	58·44
15	IX Brig., C. Battery, R. Art., Kamptee ...	November 1869 ...	November 1869, from England ..	139	1525·2	21·58	50·36
16	XX Brig., D. Battery, R. Art., Kamptee ...	...	October 1870, from Cannanore ...	149	1724·8	20·13	67·11
17	70th Regiment, Kamptee (9 months) ...	1857 ...	January 1870, from Roorkee ...	703	904·3	12·80	......
18	IX Brig., G. Battery, R. Art., Secunderabad ...	November 1869 ...	December 1869, from England ...	132	1583·3	30·30	113·64
19	XX Brig., C. Battery, R. Art., Secunderabad	...	March 1868, from Thayetmyo ...	147	1564·6	34·01	95·24
20	XXIII Brig., 5 Battery, (VII Brig., 6 Battery from July), R. Art., Secunderabad ..	...	February 1869, from Bellary ..	68	764·7	29·41	14·70
21	18th Hussars, Secunderabad ...	September 1864 ..	January 1866, from Bangalore ..	389	1832·9	138·82	77·12
22	2-24th Regiment, Secunderabad ...	November 1865 ...	February 1869, from Rangoon ...	867	1030·0	19·61	33·45
23	76th Regiment, Secunderabad, (Detachment of 112 men at Bangalore) ...	January 1864 ...	March 1871, from Thayetmyo and Toungoo ..	920	1337·1	16·30	63·04
	REGIMENT OF THE DECCAN AND NAGPORE ...			8,331	1265·4	20·05	38·77

8.—REGIMENTS of

1	V Brig., 1 Battery, R. Art., St. Thomas' Mount ...	January 1867 ...	January 1871, from Rangoon ...	57	1122·8	...	122·81
2	V Brig., 6 Battery, R. Art., St. Thomas' Mount ...	January 1867 ...	January 1869, from Belgaum ...	76	960·5	39·47	52·63
3	IX Brig., A. Battery, (XX Brig., A. Battery from July), R. Art., St. Thomas' Mount ...	November 1869 ...	November 1869, from England ...	138	1014·5	7·25	65·22
4	XXIII Brig., A. Battery, R. Art., St. Thomas' Mount ...		February 1871, from Thayetmyo ...	126	761·9	15·87	55·56

* Detachments of 186 men at Sattara, 125 men at Asseerghur, and 250 men at Bombay.

XXXI,—(continued).

and NAGPORE,—(continued).

	Total Admissions and Loss of the Year by Death and Invaliding.		Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1871.																													
			Cholera.	Smallpox.*	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sun-stroke.	Epilepsy and Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
4	Admissions	248	...	...	163	13	...	3	13	3	...	...	...	...	...	...	1	...	2	1	3	...	...	2	...	...	9	...	...	18	16	1
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	9	...	...	7	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Admissions	610	...	...	291	68	...	6	46	18	...	...	5	...	2	...	...	2	8	...	12	...	...	8	33	1	24	...	3	23	42	18
	Deaths ...	6	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...
	Invaliding ...	21	...	...	...	1	...	1	...	3	...	...	3	...	...	...	...	...	1	...	...	...	...	...	5	...	...	...	...	...	...	7
6	Admissions	163	...	...	69	...	...	7	11	4	...	...	7	2	...	...	...	...	2	2	5	...	1	5	3	...	5	...	2	9	10	9
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	7	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3
7	Admissions	168	...	...	69	...	...	14	21	9	1	...	2	1	...	...	...	...	2	2	5	...	...	4	8	1	8	...	...	13	23	5
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	5	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...	...	...	...	...	...
8	Admissions	218	...	...	104	7	...	11	8	12	...	1	2	3	...	1	1	...	1	...	7	1	2	5	6	...	9	1	1	16	16	3
	Deaths ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1
	Invaliding ...	3	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	Admissions	1,155	1	...	440	66	...	28	101	36	...	...	18	9	1	...	...	16	16	2	53	6	14	21	34	12	37	2	9	88	109	36
	Deaths ...	15	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	1	...	2	...	1	...	...	2	...	...	2	...	...	4	...
	Invaliding ...	11	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	2	...	...	...	5	...	...	...	...	...	1	...
10	Admissions	1,371	...	...	202	746	...	22	28	4	1	...	26	6	...	3	1	2	45	1	26	...	24	45	5	...	17	2	4	40	74	38
	Deaths ...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...
	Invaliding ...	16	...	...	...	...	...	1	...	...	...	...	3	3	...	...	...	...	1	...	...	...	...	1	3	...	...	...	...	...	2	2
11	Admissions	829	...	...	280	122	...	9	100	8	...	...	7	4	2	1	6	...	18	4	40	7	6	28	1	1	30	1	7	64	41	42
	Deaths ...	10	...	...	...	2	...	...	...	...	...	...	...	1	1	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	3	...
	Invaliding ...	31	...	...	5	1	...	1	...	...	...	...	8	2	...	1	...	...	1	2	3	...	...	2	1	...	...	...	...	1	1	2
12	Admissions	125	...	...	19	...	...	6	29	6	...	...	...	...	...	4	...	...	5	2	7	1	1	10	2	...	4	1	2	8	15	3
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	6	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	1	...	...	1	...	...	...	...
13	Admissions	718	...	...	115	71	...	30	200	4	...	...	7	12	1	1	4	5	14	1	31	3	8	29	27	5	16	3	10	77	26	18
	Deaths ...	8	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	...	3	...	...	...	...	...	1	1
	Invaliding ...	28	...	...	1	...	...	3	...	...	...	...	4	5	1	...	...	...	1	1	1	...	...	...	6	1	...	...	...	...	...	4
14	Admissions	242	...	...	50	6	...	10	85	4	1	...	5	2	1	...	1	6	8	1	8	2	3	6	4	1	7	...	2	26	33	20
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	Invaliding ...	9	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	2	2
15	Admissions	212	...	1	31	12	...	6	45	7	...	...	8	3	...	...	1	...	3	...	8	1	...	10	11	1	13	1	1	27	11	11
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
	Invaliding ...	7	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1
16	Admissions	267	...	...	29	5	1	9	41	8	...	...	1	1	...	4	2	1	18	1	12	3	8	1	5	...	15	...	5	40	31	16
	Deaths ...	3	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding ...	10	...	...	...	...	...	...	...	...	...	...	5	1	...	2	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...
17	Admissions	699	...	...	273	3	...	22	147	20	...	...	2	4	1	4	3	2	16	2	18	3	23	18	11	1	14	...	8	57	31	17
	Deaths ...	9	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	1	...	1	...	...	2	...	...	...	...	...	...	...	...	2
	Invaliding ...	...*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	Admissions	209	...	...	5	10	...	10	15	7	...	...	7	2	...	...	2	1	2	3	7	1	23	21	20	3	28	...	2	16	19	5
	Deaths ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...
	Invaliding ...	15	...	...	...	...	...	1	...	1	...	...	6	...	...	...	...	...	...	2	...	...	1	1	3	...	...	...	...	...	...	...
19	Admissions	230	2	...	6	3	...	5	33	9	...	...	9	2	...	...	...	6	1	2	12	...	14	16	18	1	28	...	...	17	32	14
	Deaths ...	5	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	14	...	...	...	...	...	...	...	1	...	...	2	2	...	...	...	...	...	...	...	...	3	...	4	...	...	...	...	...	...	2
20	Admissions	52	...	...	4	7	...	...	3	1	...	...	...	1	...	...	...	...	1	...	8	...	2	5	2	...	7	...	1	2	4	4
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
21	Admissions	713	71	...	24	69	...	28	21	8	1	...	46	2	3	...	9	...	7	2	15	...	38	83	66	...	42	...	14	65	63	30
	Deaths ...	54	33	...	...	2	...	1	...	...	...	...	...	...	1	1	...	...	...	2	...	...	2	...	7	...	...	...	...	...	5	...
	Invaliding ...	30	...	...	...	2	...	1	...	1	...	...	4	1	...	...	...	...	...	1	...	...	5	2	9	...	...	...	...	1	...	3
22	Admissions	893	1	...	...	76	10	31	196	30	1	...	19	3	1	2	5	3	6	6	40	...	121	77	37	2	44	...	23	58	73	28
	Deaths ...	17	1	...	...	...	3	...	...	...	...	...	...	2	1	1	...	...	...	...	...	...	2	...	6	...	...	...	...	...	1	...
	Invaliding ...	29	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	8	2	8	...	...	1	2	...	1	2
23	Admissions	1,230	...	...	48	135	...	42	224	44	...	...	35	7	...	5	10	5	21	10	83	7	40	45	70	1	112	2	17	104	109	54
	Deaths ...	15	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	3	...	...	4	...	4	...	...	...	...	...	2	...
	Invaliding ...	58	...	...	...	1	...	5	...	9	...	...	9	4	...	2	...	...	...	2	2	...	5	...	12	...	...	...	1	...	...	6
	Admissions	10,542	75	1	2,218	1435	11	303	1322	248	6	2	218	73	13	28	47	52	106	42	412	36	330	443	383	34	490	13	113	905	805	389
	Deaths ...	167	36	...	...	8	5	1	...	1	...	...	...	11	7	6	...	3	...	13	2	3	13	1	33	...	...	3	...	...	17	5
	Invaliding ...	323	...	...	13	7	...	14	...	21	...	...	52	27	1	7	1	...	7	14	11	...	23	9	63	1	...	2	3	3	8	36

SOUTHERN INDIA.

	Total Admissions and Loss of the Year by Death and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sun-stroke.	Epilepsy and Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
1	Admissions	64	...	...	...	...	...	1	4	1	...	...	...	6	...	2	1	...	...	1	4	...	2	3	10	...	6	...	1	5	9	8
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	7	...	...	...	...	...	...	...	1	...	...	...	2	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1
2	Admissions	73	...	...	...	3	...	3	8	...	1	...	...	5	1	...	6	...	2	...	4	1	1	1	7	...	4	...	5	5	14	2
	Deaths ...	3	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
	Invaliding ...	4	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
3	Admissions	140	...	...	1	5	...	4	11	1	...	...	1	...	...	1	6	3	2	2	7	2	2	8	19	...	10	...	4	16	23	12
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ...	9	...	...	...	...	...	...	...	1	...	...	1	1	1	...	1	...	...	1	...	...	1	...	1	...	...	...	...	...	...	1
4	Admissions	96	...	...	1	4	...	3	12	5	...	...	1	2	...	...	2	2	2	3	9	1	2	2	12	...	4	...	...	11	13	5
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	Invaliding ...	7	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	4	...	...	...	...	...	...	...

* The 79th Regiment took home its invalids of the season.

REGIMENTS of

	REGIMENTS & BATTERIES, & STATION OF 1871.	Date of Arrival in India.	Date of Arrival from Station previously occupied.	Average Strength during 1871.	Admission-rate of 1871 per 1,000 of Average Strength.	Loss per 1,000,	
						By Deaths.	By Invaliding.
5	V Brig., 2 Battery, R. Art., Madras ...	January 1867 ...	January 1869, from St. Thomas' Mount...	67	522·4	...	...
6	45th Regiment, Madras, (Detachment of 145 men at Trichinopoly) ...	June 1868 ...	June 1868, from Abyssinia ...	957	960·5	10·45	41·80
7	XX Brig., B. Battery, R. Art., Trichinopoly ...	...	October 1869, from St. Thomas' Mount...	139	1194·2	21·58	35·97
8	XXIII Brig., C. Battery, R. Art., Bangalore ...	...	October 1869, from Trichinopoly ...	139	1237·4	14·39	35·97
9	XXIII Brig., D. Battery, R. Art., Bangalore ...	...	February 1868, from Secunderabad ...	133	1270·7	7·52	90·23
10	16th Lancers, Bangalore ...	September 1865 ...	September 1865, from England ...	490	1008·1	10·20	34·69
11	1-21st Regiment, Bangalore ...	March 1869 ...	January 1870, from Kurrachee ...	820	1130·0	8·54	47·56
12	D. Brig., B. Battery, R. H. Art., Bellary ...	...	February 1867, from Secunderabad ...	162	1537·0	...	43·21
13	XX Brig., 1 Battery, (VII Brig., 5 Battery from July), R. Art., Bellary ...	...	November 1868, from Madras ...	72	722·2	...	13·89
14	3-60th Regiment, Bellary ...	December 1867 ...	November 1868, from Madras ...	770	796·1	9·09	46·75
15	XX Brig., E. Battery, R. Art., Cannanore ...	...	October 1870, from Kamptee ...	135	1370·4	22·22	88·89
16	89th Regiment, Cannanore (Detachments of 95 and 80 men at Malliapoorum and Calicut) ...	November 1870 ...	November 1870, from England ...	908	1118·9	22·03	40·75
			REGIMENTS OF SOUTHERN INDIA ...	5,189	1041·4	12·33	45·87

4.—REGIMENTS of

1	2-10th Regiment, Rangoon ...	January 1865 ...	January 1871, from Secunderabad ...	828	1063·0	20·53	32·61
2	V Brig., 4 Battery, R. Art., Rangoon ...	November 1867 ...	February 1871, Kurrachee ...	65	1046·2	15·38	...
3	V Brig., 5 Battery, R. Art., Rangoon ...	November 1867 ...	December 1868, from Kirkee ...	53	1434·0	...	56·60
4	V Brig., 3 Battery, R. Art., Toungoo ...	January 1867 ...	November 1868, from St. Thomas' Mount	66	1045·5	...	75·76
5	2-21st Regiment, Wing, Toungoo ...	October 1868 ...	December 1870, from Rangoon ...	318	1295·6	19·25	46·93
6	2-21st Regiment. Hd. Qrs. Thayetmyo ...		December 1870, from Rangoon ...	513	1684·2		
7	XXIII Brig., B. Battery, R. Art., Thayetmyo ...	...	January 1871, from St. Thomas' Mount...	149	1503·4	26·85	26·85
			REGIMENTS OF BURMAH AND PEGU ...	1,992	1314·3	19·08	39·16

1	Army of Bengal	35,071	1481·4	17·59	47·53
2	Army of Madras	10,678	1195·4	20·24	45·82
3	Army of Bombay	10,740	1602·7	18·78	30·54
4	Army of India	56,484	1431·4*	17·87*	43·62†

* See Note prefixed to Table XXX.
† See Note appended to Table XXVIII.

SOUTHERN INDIA,—(continued).

CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1871.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
5	Admissions	35	...	...	...	1	...	...	3	...	...	...	8	...	...	...	2	2	2	...	3	...	...	...	3	...	...	...	...	2	5	4
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Admissions	947	...	...	67	23	...	19	96	43	...	...	121	6	2	5	9	9	6	6	51	6	23	35	44	...	55	...	32	121	106	62
	Deaths ...	10	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	...	1	...	2	...	...	...	...	...	3	1
	Invaliding ...	40	...	...	1	...	...	3	...	2	...	...	11	5	...	2	...	...	...	3	1	...	1	1	4	...	...	...	...	2	4	...
7	Admissions	166	...	...	40	6	...	6	9	2	1	...	1	3	...	2	...	2	1	1	5	1	6	2	6	...	20	...	1	19	19	13
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1	...
	Invaliding ...	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	1
8	Admissions	172	...	1	11	2	...	1	14	1	...	...	3	...	...	...	2	1	2	...	5	1	1	4	...	...	58	...	1	28	30	6
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	Invaliding ...	5	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
9	Admissions	169	...	...	11	1	1	3	8	9	...	...	5	...	...	...	1	3	2	...	13	...	1	2	...	...	43	...	...	26	26	14
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	12	...	...	...	...	...	1	...	3	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
10	Admissions	403	...	...	8	18	1	20	47	11	...	...	6	5	...	6	2	10	13	9	37	12	16	14	34	...	78	1	6	52	59	28
	Deaths ...	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ...	17	...	...	...	...	...	1	...	2	...	...	1	...	...	1	...	...	2	...	...	...	...	1	3	1	...	...	...	...	2	3
11	Admissions	934	1	1	86	13	4	62	137	16	13	...	48	9	2	6	13	8	22	5	44	...	25	19	28	10	76	3	6	108	116	53
	Deaths ...	7	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	2	...
	Invaliding ...	39	...	...	...	...	...	1	...	1	...	...	3	4	...	3	1	...	1	2	1	...	4	2	7	1	...	1	...	1	...	6
12	Admissions	249	...	...	3	6	...	23	12	3	...	...	8	2	...	...	1	...	7	...	32	...	1	21	12	...	30	...	4	36	28	20
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	7	...	...	...	...	...	4	...	...	...	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
13	Admissions	52	...	...	2	1	...	3	4	...	...	...	2	...	...	...	...	...	...	5	4	...	...	5	2	...	2	2	2	4	8	6
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
14	Admissions	613	...	...	44	38	1	43	98	15	1	...	24	4	...	2	1	1	12	9	16	2	19	28	30	4	29	1	19	117	35	20
	Deaths ...	7	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	2
	Invaliding ...	36	...	...	...	...	...	2	...	4	...	...	9	2	...	2	...	...	1	2	...	...	2	...	4	...	...	1	...	2	1	4
15	Admissions	185	...	...	8	7	...	6	11	...	...	...	8	1	...	...	1	3	4	2	4	...	20	15	26	...	19	3	4	25	15	6
	Deaths ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ...	12	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	...	1	...	6	...	...	1	...	...	...	...
16	Admissions	1,016	1	...	13	186	12	12	83	14	1	...	48	16	3	4	5	10	10	7	27	2	176	55	30	1	79	4	4	94	74	45
	Deaths ...	20	...	...	...	3	6	...	...	...	...	...	...	1	...	...	...	...	...	2	...	1	6	...	...	...	...	...	...	...	1	...
	Invaliding ...	37	...	...	...	1	...	...	...	3	...	...	3	9	...	2	...	...	1	1	1	...	11	...	1	...	...	1	...	...	...	3
	Admissions	5,404	2	2	295	314	19	209	557	121	17	...	284	50	8	28	52	54	84	50	265	28	295	214	263	15	513	14	89	669	580	304
	Deaths ...	64	...	...	...	3	9	...	...	...	1	...	...	4	1	1	...	5	...	7	1	1	8	...	8	...	...	...	...	...	11	4
	Invaliding ...	238	...	...	1	1	...	12	...	18	...	...	43	27	1	11	2	...	6	15	3	...	20	4	32	3	...	4	...	5	8	22

BURMAH and PEGU.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
1	Admissions	905	...	...	123	17	10	18	84	73	...	2	20	13	2	7	3	2	5	11	42	3	127	17	40	...	63	1	5	68	70	40
	Deaths ...	17	...	...	...	1	2	...	...	...	...	...	...	2	...	...	...	...	...	4	...	...	3	...	5	...	...	...	...	...	...	...
	Invaliding ...	27	...	...	...	...	...	...	...	5	...	...	2	1	...	...	...	...	...	4	...	...	8	...	4	...	...	...	...	...	...	3
2	Admissions	68	...	...	7	2	1	1	13	1	...	...	...	...	...	...	...	2	...	1	3	...	3	3	9	...	2	...	2	10	7	1
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Admissions	76	...	...	9	1	...	5	10	5	...	...	...	...	...	...	...	1	...	4	2	...	3	9	7	1	4	...	1	7	5	2
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...
4	Admissions	69	...	...	5	...	...	...	4	5	...	...	18	...	...	3	1	...	1	2	2	...	2	3	2	...	1	...	2	2	5	11
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	5	...	...	...	...	...	...	...	...	...	...	3	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
5	Admissions	412	...	...	16	70	...	8	18	12	...	...	8	1	3	2	5	7	12	2	17	...	9	34	16	...	40	1	4	24	66	28
	Deaths ...	3	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Admissions	864	...	...	37	81	...	30	57	24	...	...	102	22	2	4	10	3	4	7	44	3	52	45	101	...	57	3	7	63	68	35
	Deaths ...	13*	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	2	1	...	2	...	1	...	...	...	...	...	2	1
	Invaliding ...	39†	...	...	...	...	...	2	...	3	...	...	8	6	...	1	...	...	...	2	...	...	4	...	8	...	...	...	1	1	...	3
7	Admissions	224	...	...	4	18	...	11	19	4	...	...	13	6	1	...	1	3	1	...	10	3	12	17	24	...	11	2	3	26	22	13
	Deaths ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	2	...	...	...	...	...	...	...
	Invaliding ...	4	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
	Admissions	2,618	...	...	201	189	11	73	205	124	...	2	161	42	8	16	20	18	23	27	120	9	208	158	211	1	187	7	24	200	243	130
	Deaths ...	38	...	...	...	3	2	...	...	...	...	...	...	2	2	2	...	1	...	7	1	...	6	...	8	...	...	...	...	...	3	1
	Invaliding ...	78	...	...	...	...	...	2	...	9	...	...	14	7	...	2	...	...	...	7	...	...	13	...	16	...	...	...	1	1	...	6

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Wounds and Accidents.	All other Causes.
1	Admissions	51,954	42	10	14,708	5809	131	1957	6334	849	105	14	825	306	61	172	251	120	840	243	2531	341	1156	2206	2073	274	2033	98	540	2916	3087	1914
	Deaths ...	617	25	1	...	75	68	1	...	2	3	1	4	56	28	11	...	9	...	57	4	39	40	4	97	1	...	7	...	...	61	28
	Invaliding ...	1,562	...	...	91	8	1	88	11	100	...	...	295	123	7	41	11	...	20	120	41	1	65	14	252	11	4	12	8	18	34	106
2	Admissions	12,759	76	3	965	829	41	445	1522	383	20	2	577	128	22	59	105	96	190	104	596	54	775	654	718	26	1010	24	186	1281	1229	630
	Deaths ...	216	36	...	...	9	15	1	...	1	1	...	...	12	8	5	...	7	...	21	3	2	26	...	38	...	...	...	...	...	23	8
	Invaliding ...	489	...	...	1	6	...	21	...	39	...	...	87	44	1	17	3	...	7	30	5	...	56	10	87	3	...	5	4	8	11	44
3	Admissions	16,139	2	...	5,592	1843	23	472	1672	270	11	5	250	91	38	31	84	67	286	40	577	40	246	623	166	62	555	24	93	981	961	816
	Deaths ...	148	1	...	1	9	16	...	...	...	...	1	...	15	13	7	...	6	...	13	1	3	9	3	20	...	...	5	...	...	19	6
	Invaliding ...	328	...	...	18	3	...	15	...	15	...	...	59	21	1	6	3	...	8	25	20	...	4	3	54	3	...	3	...	1	11	55
4	Admissions	80,852	120	13	21,265	8481	195	2874	9428	1502	136	21	1652	525	121	262	440	202	1316	396	3704	444	2177	3483	3257	362	3598	146	819	5177	5277	3360
	Deaths ...	981	62	1	1	93	94	2	...	3	4	2	4	83	49	23	...	22	...	91	8	44	75	7	155	1	...	12	...	...	103	42
	Invaliding ...	2,379	...	...	110	17	1	124	11	154	...	...	441	188	9	64	17	...	35	175	66	1	115	27	393	17	4	20	12	27	56	295

---

* Of these Deaths six occurred in the Depôt Hospitals at Madras.

† For the Regiment as a body.

EUROPEAN TROOPS, 1871.

XXXII.

TABLE showing the NUMBER of DAYS spent in HOSPITAL by the MEN of each REGIMENT.

BENGAL PRESIDENCY.

STATION.	Regiment.	Average Strength for the Year.	Aggregate of the Number of Days spent in Hospital.	Average Number of Days per Man.
Fort William ...	2-19th Regiment ...	831	18,901	22·7
	XXII Brigade, 3 Battery, (10 months) ...	65	956	14·7
Dum-Dum and Barrackpore ...	107th Regiment ...	930	13,023	14·0
Barrackpore ...	VIII Brigade, F Battery ...	139	2,724	19·6
	XVI Brigade, B Battery ...	152	3,045	20·3
Hazareebaugh ...	93rd Regiment ...	933	20,752	22·2
Dinapore ...	96th Regiment ..	872	22,608	25·9
	VIII Brigade, B. Battery ...	135	2,712	20·1
Benares ...	1-3rd Regiment, Wing ...	376	(7,925)	21·1
	F Brigade, A Battery ...	148	2,900	19·6
Fyzabad ...	26th Regiment ...	847	17,762	21·0
	XVI Brigade, E Battery ...	130	3,082	23·7
Lucknow ...	21st Hussars ...	423	7,451	17·6
	1-17th Regiment ...	941	21,490	22·8
	62nd Regiment ...	840	14,928	17·8
	F Brigade, C Battery ..	144	4,746	33·0
	VIII Brigade, C Battery ...	135	3,942	29·2
	XXIV Brigade, 3 Battery ...	83	1,443	17·4
Seetapore ...	1-3rd Regiment, Head Quarters (with Wing at Benares)	870	13,585	15·5
	XVI Brigade, A Battery ...	136	2,267	16·7
Cawnpore ...	1-14th Regiment ...	811	30,308	37·3
	XIX Brigade, A Battery ...	147	5,427	36·9
Allahabad ...	104th Regiment, (10 months)	596	14,165	23·7
	XVI Brigade, D Battery ...	144	2,791	19·4
	XXV Brigade, 1 Battery, (XXIV, 7, from July) ...	67	922	13·7
Shahjehanpore ..	2-1st Regiment, Head Quarters (with Wing at Raneekhet) ...	908	28,578	31·5
Bareilly ...	2-25th Regiment ...	951	15,498	16·3
	XVI Brigade, G Battery, (XXIII, E, from July) ...	137	3,212	23·4
Roorkee ...	100th Regiment, (with Wing at Delhi) ...	836	21,165	25·3
Meerut ..	4th Hussars ...	444	12,755	28·7
	105th Regiment ...	776	20,938	27·0
	A Brigade, C Battery ...	151	3,790	25·1
	F Brigade, D Battery, (D. D. from July) ...	142	3,165	22·3
	XVI Brigade, F Battery ...	135	4,130	30·7
	XIX Brigade, D Battery ...	145	4,062	28·0
Delhi ...	109th Regiment, Wing ...	363	(9,082)	25·0
	XXIV Brigade, 1 Battery ...	79	2,354	29·8
Muttra ...	11th Hussars ...	461	7,774	16·9
Agra ...	65th Regiment, (10 months)	920	17,060	18·5
	XIX Brigade, F Battery ...	149	4,311	28·9
	XXII Brigade, 7 Battery, (10 months) ...	63	1,057	16·8
Morar ...	1-11th Regiment ...	837	25,709	30·7
	F Brigade, B Battery ...	139	2,961	21·3
	XVI Brigade, C Battery ...	132	3,057	23·2
	XXV Brigade, 3 Battery, (10 months) ...	71	1,457	20·5
Gwalior Fortress	Detachment 106th Regiment	240	3,603	15·0
	XXIV Brigade, 2 Battery ...	77	1,058	13·7
Jhansi ...	106th Regiment, Head Quarters ...	478	13,323	28·2
Nowgong ...	Detachment 106th Regiment	165	3,195	19·4
	XIX Brigade, G Battery, (XXIII F, from July) ...	150	4,801	32·0
Saugor ...	1-19th Regiment, (10 months)	714	10,376	14·5
	VIII Brigade, E Battery ...	138	3,672	26·6
	XXII Brigade, 6 Battery (10 months) ...	75	678	9·0
Jubbulpore ...	VIII Brigade, D Battery ...	144	2,127	14·8
Umballa ...	20th Hussars ...	443	7,603	17·2
	72nd Regiment, (9 months)	908	10,901	12·0
	F Brigade, E Battery ...	146	3,618	24·7
Jullundur ...	92nd Regiment ...	871	12,797	14·7
	VIII Brigade, G Battery ...	135	5,575	41·3
Ferozepore ...	39th Regiment ...	925	14,721	15·9
	XIX Brigade, B Battery ...	144	2,177	15·1
	XXII Brigade, 5 Battery, (10 months) ...	70	323	4·6
Mooltan ...	41st Regiment ...	881	13,396	15·2
	XIX Brigade, C Battery ...	144	2,359	16·4
	XXV Brigade, 2 Battery, (10 months) ...	63	546	8·7
Sealkote ...	5th Lancers ...	443	7,347	16·6
	58th Regiment ...	742	12,750	17·2
	A Brigade, E Battery ...	146	2,864	19·6
Umritsur ...	XXII Brigade, 4 Battery, (10 months) ...	62	806	13·0
Meean Meer ...	37th Regiment ...	707	17,087	24·2
	F Brigade, F Battery ...	139	2,477	17·8
	VIII Brigade, H Battery ...	134	4,239	31·6
	XXIV Brigade, 5 Battery ...	79	1,578	20·0
Rawulpindee ...	36th Regiment ...	738	14,088	19·1
	38th Regiment (10 months) ...	721	15,080	20·9
	A Brigade, B Battery ...	153	2,999	19·6
	XIX Brigade, A Battery ...	155	3,628	23·4
	XXV Brigade, 5 Battery, (XXII, 2, from July) ...	87	416	4·8
Campbellpore ...	A Brigade, D Battery ...	141	4,602	32·6
Attock ...	XXIV Brigade, 6 Battery ...	83	1,273	15·3
Nowshera ...	1-5th Regiment ...	892	23,146	25·9
Peshawur ...	1-6th Regiment ...	858	17,634	20·6
	2-60th Regiment ..	999	20,138	20·2
	A Brigade, A Battery ...	143	4,450	31·1
	XXII Brigade, B Battery, (XX F. from July) ...	140	3,090	22·1
	XXV Brigade, 4 Battery (10 months) ...	68	1,302	19·1
Darjeeling ...	XXIV Brigade, 4 Battery ...	72	1,068	14·8
Raneekhet ...	2-1st Regiment, Wing ...	376	(12,312)	32·7
Chuckrata ...	55th Regiment ...	870	8,997	10·3
Dugshaie ...	85th Regiment ...	918	18,868	20·6
Subathoo ...	2-12th Regiment ...	840	13,516	16·1
Jutogh ...	XX[illegible] Brigade, A Battery, (10 months) ...	87	1,112	12·8
Detachments ...	Chumba Hills (6 months) ...	577	(5,016)	8·7
	Murree Hills (6 months) ...	550	(3,582)	6·5

MADRAS PRESIDENCY.

STATION.	Regiment.	Average Strength for the Year.	Aggregate of the Number of Days Spent in Hospital.	Average Number of Days per Man.
Kamptee ...	79th Regiment (9 months) ...	703	10,174	14·5
	D Brigade, A Battery ...	153	4,194	27·4
	IX Brigade, C Battery ..	144	3,605	25·0
	XX Brigade, D Battery ...	151	5,037	33·4
Secunderabad ...	2-24th Regiment ...	869	14,367	16·5
	76th Regiment ...	920	20,433	22·2
	18th Hussars ...	386	10,001	25·9
	IX Brigade, G Battery ...	136	3,766	27·7
	XX Brigade, C Battery ...	147	3,873	26·3
	XXIII Brigade, 5 Battery (7 Battery, VI Brigade from July) ...	70	828	11·8
Madras ...	45th Regiment ...	944	20,459	21·7
	V Brigade, 2 Battery ...	67	1,006	15·0
St. Thomas' Mount	V Brigade, 1 Battery ...	57	987	17·3
	V Brigade, 6 Battery ..	76	2,007	26·4
	XX Brigade, A Battery (A Battery, IX Brigade from July) ...	138	2,546	18·5
	XXIII Brigade, A Battery ...	134	1,970	14·7
Trichinopoly ...	XX Brigade, B Battery ...	139	3,789	27·3
Bangalore ...	10th Lancers ...	494	7,317	14·8
	1-21st Regiment ...	820	16,998	20·7
	XXIII Brigade, C Battery ...	139	1,870	13·5
	XXIII Brigade, D Battery ...	134	2,118	15·8
Bellary ...	3-60th Regiment ...	772	14,229	18·4
	D Brigade, B Battery ...	162	3,705	22·9
	XX Brigade, 1st Battery (7 Battery, V Brigade from July) ...	72	796	11·1
Cannanore ...	89th Regiment ...	907	18,252	20·1
	XX Brigade, E Battery ...	135	2,592	19·2
Rangoon ...	2-10th Regiment ...	820	14,597	17·8
	V Brigade, 4 Battery ...	65	1,210	18·6
	V Brigade, 5 Battery ...	53	1,300	24·5
Toungoo ...	V Brigade, 3 Battery ...	69	1,679	24·3
	2-21st Regiment, Wing ... }	842	18,555	22·0
Thayetmyo ...	2-21st Regiment, Hd. Qrs. }			
	XXIII Brigade, B Battery ...	148	3,347	22·6

BOMBAY PRESIDENCY.

STATION.	Regiment.	Average Strength for the Year.	Aggregate of the Number of Days Spent in Hospital.	Average Number of Days per Man.
Nusseerabad ...	IX Brigade, D Battery ..	127	3,798	29·9
	1-8th Regiment .	874	28,601	32·7
Neemuch ...	XVIII Brigade, D Battery .	144	3,698	25·7
Mhow .	E Brigade, B Battery (E Battery, D Brigade, from July) ..	175	3,214	18·4
	VI Brigade, 1 Battery .	79	907	11·5
	15th Hussars ...	480	9,538	19·9
	59th Regiment ...	927	18,758	20·2
Deesa ...	IX Brigade, E Battery .	140	2,343	16·7
	108th Regiment ...	898	16,061	17·9
Ahmedabad .	IX Brigade, F Battery ...	144	2,833	19·7
	XVIII Brigade, A Battery ...	147	2,707	18·4
Kurrachee ...	XVIII Brigade, B Battery ...	141	2,543	18·0
	66th Regiment ...	913	15,744	17·2
Aden ...	VI Brigade, 4 Battery ...	74	1,454	19·7
	VI Brigade, 5 Battery ..	76	1,153	15·2
	3rd Battalion Rifle Brigade (11 months) ...	554	5,599	10·1
Bombay ...	VI Brigade, 2 Battery ...	77	1,417	18·4
	VI Brigade, 3 Battery ...	73	759	10·4
	VI Brigade, 6 Battery ...	75	1,704	22·7
Ahmednuggur ...	3rd Hussars ..	489	8,961	18·3
	E Brigade, A Battery (C Battery, D Brigade from July) ...	168	3,125	18·6
Poona ...	49th Regiment ...	899	16,790	18·7
	56th Regiment (9 months) ..	897	13,375	14·9
	83rd Regiment ..	909	18,252	20·1
Kirkee ...	IX Brigade, B Battery ...	136	2,494	18·3
	XVIII Brigade, E Battery ...	143	2,856	20·0
	XVIII Brigade, F Battery ...	147	2,481	16·9
Belgaum ...	XVIII Brigade, C Battery ...	151	2,382	15·7
	1-2nd Regiment ...	893	14,743	16·5

Aggregate of Hospital Diets (Days in Hospital) derived from the Weekly Returns of 1871	Army of Bengal ..	759,283
	Madras ..	227,402
	Bombay ...	215,074
	Army of India ..	1,201,759
Aggregate Number of Days spent in Hospital derived from the Regimental Returns contained in this Table ...	Army of Bengal ...	745,086
	Madras ...	217,607
	Bombay ...	208,379
	Army of India ...	1,171,072

The difference arises chiefly from the fact of Regiments present for short periods being omitted in this Table. It is probable, also, that in some instances the time spent in Hospital by men at Convalescent Depôts and elsewhere has been left out in making up the Statement.

EUROPEAN TROOPS, 1871.

XXXIII.

DISTRIBUTION of the EUROPEAN ARMY of the BENGAL PRESIDENCY on 30th June 1871.

STRENGTH OF THE ARMY ON 30TH JUNE 1871, 35,408.

ARTILLERY.	Station.	Strength.
A. Horse Brigade, Head Quarters	Peshawur	7
A. Battery	Peshawur	104
B. „	Rawulpindee	123
C. „	Meerut	139
D. „	Campbellpore	127
E. „	Sealkote	115
F. Horse Brigade, Head Quarters	Umballa	9
A. Battery	Benares	137
B. „	Morar	120
C. „	Lucknow	139
D.* „	Meerut	128
E. „	Umballa	134
F. „	Meean Meer	123
8th Brigade, Head Quarters	Lucknow	8
B. Battery	Dinapore	121
C. „	Lucknow	126
D. „	Jubbulpore	136
E. „	Saugor	126
F. „	Barrackpore	134
G. „	Jullundur	90
H. „	Meean Meer	108
16th Brigade, Head Quarters	Barrackpore	5
A. Battery	Seetapore	135
B. „	Barrackpore	134
C. „	Morar	116
D. „	Allahabad	120
E. „	Fyzabad	130
F. „	Meerut	130
G † „	Bareilly	128
19th Brigade, Head Quarters	Meerut	6
A. Battery	Cawnpore	128
B. „	Ferozepore	133
C. „	Mooltan	123
D. „	Meerut	136
E. „	Rawulpindee	122
F. „	Agra	133
G.‡ „	Nowgong	137
22nd Brigade, Head Quarters	Meean Meer	8
A. Battery	Jutogh	89
B.§ „	Peshawur	112
3. „	Fort William	63
4. „	Umritsur	56
5. „	Ferozepore	59
6. „	Saugor	72
7. „	Agra	64
24th Brigade, Head Quarters	Morar	5
1. Battery	Delhi	63
2. „	Gwalior Fortress	65
3. „	Lucknow	76
4. „	Darjeeling	67
5. „	Meean Meer	33
„ „	Fort Lahore	15
6. „	Attock	58
25th Brigade, Head Quarters	Allahabad	4
1.‖ Battery	Allahabad	66
2. „	Mooltan	50
3. „	Morar	63
4. „	Peshawur	43
5.¶ „	Huzara Hills	87
Sappers and Miners	Roorkee	28
CAVALRY.		
5th Lancers	Sealkote	338
4th Hussars	Meerut	413
11th Hussars	Muttra	410
20th Hussars	Umballa	377
21st Hussars	Lucknow	395

INFANTRY.	Station.	Strength.
1st Regiment, 2nd Battalion	Shahjehanpore	399
„ „	Raneekhet	450
3rd „ 1st „	Seetapore	498
„ „	Benares	367
5th „ 1st „	Nowshera	573
„ „	Attock	103
6th „ 1st „	Peshawur	306
„ „	Cherat	398
11th „ 1st „	Morar	765
12th „ 2nd „	Subathoo	827
14th „ 1st „	Cawnpore	787
17th „ 1st „	Lucknow	880
19th „ 1st „	Jubbulpore	257
„ „	Saugor	458
19th „ 2nd „	Fort William	818
25th „ 2nd „	Bareilly	711
„ „	Moradabad	175
26th „	Fyzabad	811
36th „	Rawulpindee	486
37th „	Meean Meer	585
„	Fort Lahore	67
38th „	Rawulpindee	490
39th „	Ferozepore	869
41st „	Mooltan	640
„	Dera Ismael Khan	101
55th „	Chuckrata	855
58th „	Sealkote	643
2-60th „	Peshawur	791
62nd „	Lucknow	793
63rd „	Hazareebaugh	885
65th „	Agra	852
72nd „	Umballa	733
„	Dugshaie	60
79th „ Detachment	Puchmurree	98
85th „	Dugshaie	921
92nd „	Jullundur	523
„	Umritsur	69
„	Dhurmsalla	112
96th „	Dinapore	741
„	Chunar	66
104th „	Allahabad	447
„	Fort Allahabad	151
105th „	Meerut	729
106th „	Jhansi	440
„	Gwalior Fortress	239
„	Nowgong	162
107th „	Dum-Dum	606
„	Barrackpore	285
109th „	Roorkee	293
„	Delhi	350
„	Futtehghur	189
HILL WORKING PARTIES	Chumba Hills	580
	Murree Hills	472
CONVALESCENT DEPOTS	Darjeeling	115
	Nynee Tal	259
	Landour	219
	Kussowlie	715
	Dalhousie	396
	Murree	600
FAMILY DETACHMENT	Campbellpore	34

* D. Battery D. Brigade from 1st July.
† E. Battery, 23rd Brigade, from 1st July.
‡ F. Battery, 23rd Brigade, from 1st July.
§ F. Battery, 20th Brigade, from 1st July.
‖ 7. Battery, 24th Brigade, from 1st July.
¶ 2. Battery, 22nd Brigade, from 1st July.

DISTRIBUTION of the EUROPEAN ARMY of MADRAS and BOMBAY on 30*th June* 1871.

STRENGTH OF THE ARMY OF MADRAS ON 30TH JUNE 1871, 10,811.	STATION.	STRENGTH.
ARTILLERY.		
D. Horse Brigade, Head Quarters ...	Bangalore ..	9
A. Battery ...	Kamptee .	135
B. „ ...	Bellary ...	141
Details ...	Bangalore ..	21
5th Brigade, Head Quarters ...	St. Thomas' Mount	7
1. Battery ...	St. Thomas' Mount ...	58
2. „ ..	Madras ...	50
3. „ ..	Toungoo ..	54
4. „ ...	Rangoon ...	63
5. „ ...	Rangoon	53
6. „ ...	St. Thomas' Mount ...	78
Details ..	St. Thomas' Mount ...	3
9th Brigade, A. Battery* ...	St. Thomas' Mount .	124
C. „ ..	Kamptee ...	119
G. „ ...	Secunderabad ...	124
20th Brigade, 1. Battery† ...	Bellary ..	69
B. „ ...	Trichinopoly ..	132
C. „ and Hd. Qrs.	Secunderabad ...	144
D. „ ...	Kamptee	124
E. „ ..	Cannanore .	125
23rd Brigade, Head Quarters ...	Kamptee ...	8
A. Battery ...	St. Thomas' Mount	124
B. „ ..	Thayetmyo .	146
C. „ ...	Bangalore ..	106
D. „ ...	Bangalore .	111
5‡ „ ...	Secunderabad .	63
CAVALRY.		
16th Lancers ...	Bangalore	450
18th Hussars ...	Secunderabad ..	351
INFANTRY.		
10th Regiment 2nd Battalion ..	Rangoon .	710
„ „ ...	Port Blair ..	109
21st „ 1st „	Bangalore	780
21st „ 2nd „ ...	Thayetmyo	422
„ „ ..	Toungoo	322
24th „ 2nd „ ..	Secunderabad	867
45th „ ..	Madras	655
„ ..	Trichinopoly ..	142
3-60th „ ..	Bellary ...	817
70th „ ...	Secunderabad ...	692
„ ..	Bangalore .	109
79th „ ...	Kamptee	547
„ ..	Seetabuldee ..	48
89th „	Cannanore ..	704
„ ..	Malliapoorum .	95
„ ..	Calicut	80
DEPOTS.		
	Ramandroog	52
	Wellington ..	180
	Poonamallee	142
	Madras	21

STRENGTH OF THE ARMY OF BOMBAY ON 30TH JUNE 1871, 10,978.	STATION.	STRENGTH.
ARTILLERY.		
E. Horse Brigade, Head Quarters ...	Mhow .	7
A. Battery** ...	Ahmednuggur .	158
B. „ †† ..	Mhow .	163
6th Brigade, 1. Battery ...	Mhow	77
2. „ ..	Bombay	70
3. „ ...	Bombay	69
4. „ ..	Aden	71
5. „ .	Aden	71
6. „ and Head Quarters	Bombay	60
9th Brigade, B. Battery ...	Kirkee	137
D. „ ...	Nusseerabad	133
E. „ ...	Deesa	134
F. „ and Hd. Quarters	Ahmedabad	126
18th Brigade, A. Battery ...	Ahmedabad	132
B. „ .	Kurrachee .	146
C. „ ...	Belgaum	145
D. „ .	Neemuch	148
E. „ and Hd. Quarters	Kirkee ...	139
F. „ .	Kirkee	152
Detachment of Artillery ...	Baroda	22
Sappers and Miners ...	Kirkee	9
CAVALRY.		
3rd Hussars ..	Ahmednuggur .	491
15th Hussars	Mhow	164
INFANTRY.		
2nd Regiment 1st Battalion ...	Belgaum	860
8th „ 1st „ ..	Nusseerabad	591
„ „ „ ..	Neemuch	238
49th „ ...	Poona	328
„	Bombay	251
„ .	Asseerghur	119
„ ...	Sattara	184
56th „ ...	Poona	894
59th „ .	Mhow	688
„ ...	Indore	123
„ .	Neemuch	109
66th „ ...	Kurrachee	604
„ ...	Hyderabad	260
83rd „ ...	Poona	892
108th „ ...	Deesa	714
„ .	Mount Aboo	157
3rd Battalion Rifle Brigade ..	Aden	571
DEPOTS		
	Poorundhur	25
	Mount Aboo .	29
	Taraghur, Ajmere	41
	Ghizree	45
	Bombay	20
	Deolalee	13
	Poona	87

* A. Battery, 20th Brigade, from 1st July.
† 7th Battery, 5th Brigade, from 1st July.
‡ 7th Battery, 6th Brigade, from 1st July.

** C. Battery, D. Brigade, from 1st July.
†† E. Battery, D. Brigade, from 1st July.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

I.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS composing the ARMY of INDIA during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Death-rate of the Year per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Typhoid Fever.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Childbirth and Abortion.†	All other Causes.
January ...	6,158	158	25·7	12	...	.	...	...	2	1	..	2	3	...	2	...	...	...	...	2
February .	6,304	149	23·7	13	.	.	...	...	3	1	...	..	1	...	1	2	.	...	4	1
March .	6,262	201	32·1	9	.			...	2	..	.	1	..	...	1	1	1	1	1	1
April .	6,480	243	37·5	10	.	.	..	...	1	..	1	...	2	..	1	1	..	...	2	2
May ..	6,474	316	48·8	15	.	4	1	...	...	..	1	1	1	...	1	1	...	1	1	3
June .	6,447	325	50·4	17	...	2	..	.	5	...	1	1	1	3	1	...	1	...	..	2
July ...	6,445	365	56·0	8		..	..	..	3	...	...	3	..	...	1	...	1	...	..	..
August ..	6,442	374	58·1	19	...		.		..	1	.	1	1	5	7	1	...	..	1	2
September ..	6,381	341	53·4	12	.	.	..	..	4	..	.	2	...	...	2	...	1	...	2	1
October ...	6,288	290	46·1	9		..	.	..	1	...	.	..	2	1	2	2	...	...	1	...
November ..	6,181	234	36·1	15	...	5	.	...	2	...	..	3	...	1	1	1	..	...	2	...
December .	6,428	170	26·4	15	..	1	...		4	1	.	4	.	.	1	1	...	1	2	.
						12	1	...	27	4	3	18	11	10	21	10	4	3	16*	14
						Died per 1,000 of Strength.														
For the year ...	6,381	204	41·4	154	24·12	1·88	·16	4·86			·47	2·82	1·72	1·56	3·29	1·56	·63	·47	2·51	2·19

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	..	..	1		8	2	..	...	..	...	7	1	19	3·0	63·2
Smallpox .	..	..	1	1	2	1	...	...	.	..	1	1	7	1·1	14·3
Fever, Intermittent ...	87	66	89	97	145	136	130	107	128	150	100	72	1,307	218·8	...
,, Remittent and Continued ...	31	34	41	94	121	80	86	72	62	61	44	33	759	118·9	3·6
,, Typhoid ...	2	1	.	...	..	1	..	1	1	1	..	2	9	1·4	44·4
Heat Apoplexy ...	.	...	..	1	1	2	..	1	...	1	..	..	6	·9	50·0
Dysentery ..	14	9	23	10	17	28	27	35	18	21	23	28	253	39·6	7·1
Diarrhœa ...	21	27	28	39	23	40	37	61	31	24	19	18	368	57·6	3·0
Hepatitis ..	4	11	9	12	12	13	14	15	9	16	8	12	135	21·2	7·4
Spleen Disease .		1	1	...	1	..	1	2	...	...	...	1	7	1·1	...
Respiratory Diseases	37	17	20	23	27	16	16	24	22	24	22	22	270	42·3	3·7
Phthisis Pulmonalis ...	4	4	6	5	6	6	6	10	6	4	5	7	69	10·8	30·4
Atrophy and Anæmia† ..	62	53	85	116	183	136	140	168	124	140	83	71	1,361	213·2	...
Rheumatism	6	12	5	12	15	10	11	14	10	4	6	2	107	16·8	...
Eye Diseases ...	6	1	14	22	68	55	116	112	51	53	19	5	522	81·8	...
Childbirth	...	...	...	...	..	.	...	.	.	...	...	..	...	...	...
Abortion	12	18	13	12	19	13	10	14	13	11	10	11	156	24·4	1·9
Diseases peculiar to Women .	12	17	28	19	32	25	20	24	18	27	13	9	244	38·2	1·0
Abscess and Ulcer	9	10	15	15	19	18	18	18	14	9	9	12	166	26·0	
Injuries ..	5	4	7	9	5	7	8	8	4	4	7	2	70	11·0	
All other Causes ..	59	47	55	75	79	79	84	103	60	58	55	29	783	122·7	
	371	332	411	562	783	668	724	870	571	608	431	338	6,708		
	Admitted per 1,000 of the Average Strength in each Month.														
	60·2	52·7	70·4	86·6	120·9	103·6	112·3	136·4	89·5	96·7	66·5	52·6	1050·8‡		

---

* For the Causes of these Deaths see Table No. XIII

† Cases of Debility following Childbirth are included under this heading.

‡ Cases of Childbirth being no longer reckoned as Admissions into Hospital, the Admission-rate is diminished by the exclusion of this item.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

II.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMETTS composing the ARMY of INDIA during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength	Causes of Deaths																			
						Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Intermittent Fevers	Remittent and Continued Fevers.	Typhoid Fever.	Heat Apoplexy.	Dentition	Convulsion.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia	Croup and Diphtheria	All other Causes.
January	10,159	226	22·2	49	4·82	...	...	1	1	1	1	1			1	9	5	3		5	5	7	1	4	1
February ...	10,291	247	24·0	35	3·40	..	...		2	1	1	1	1	...	2	4	2	3		1	4	3	4	1	5
March ...	10,524	304	28·9	54	5·13	...	.	4	5	2	1	5		1	4	12	2	1		2	8	2	2	1	2
April	10,728	376	35·0	78	7·27	..		2	1	1		6	1		6	17	5	1		.	19	10	3	1	6
May ..	10,718	540	50·4	111	10·36	4	..	10	.	3	3	5		2	7	21	3	2	.	1	27	11	5	3	4
June .	10,790	557	51·6	84	7·78	2	.	10	1		...	10		1	10	16	7	5		2	9	6	1	1	3
July ..	10,829	644	59·5	73	6·74			4	1	1		5		...	9	13	2			2	19	8	6	1	2
August .	10,889	630	57·8	118	10·84	...	..	2	5	7	2	11			13	10	3	6		5	27	16	2	1	8
September ..	10,962	571	52·1	46	4·20			.	1		2	1		1	1	5	2	1		4	9	4	4	2	3
October .	10,869	434	40·0	47	4·33	..	...		1	..	1	2			1	12	1	2		4	7	8	3	1	4
November .	10,923	321	29·4	50	4·58	4		1				4		.	..	4	1	3		1	6	8	6	...	7
December ...	10,714	252	23·5	49	4·57	..			1	1		1			2	13	1	3			9	5	4	2	7
						10	..	34	19	17	11	55	2	5	64	136	34	30	..	27	149	88	44	18	61
						Died per 1,000 of Strength.																			
For the year ...	10,700	425	39·7	794	74·21	·93	..	3·18	1·78	1·59		6·36		·47	5·98	12·71	3·18	2·80	..	2·52	13·93	8·22	4·11	1·68	4·77

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May	June.	July.	Aug	Sept.	Oct.	Nov.	Dec			
Cholera ..	...	...	...	...	9	3	...	..	.	...	7	...	19	1·8	52·5
Smallpox ..	1	...	..	1	...	...	.	1	.	..	.		3	·3	...
Measles ..	7	24	58	44	159	104	39	29	28	10	27	34	563	52·6	6·0
Hooping Cough ...	15	17	21	13	13	18	16	27	17	14	11	34	216	20·2	8·8
Scarlet Fever	1	3	16	19	9	5	33	21				3	110	10·3	15·5
Intermittent Fevers ...	68	45	70	84	97	99	100	104	141	136	107	62	1,173	100·6	·9
Remittent and Continued Fevers	40	34	63	62	99	57	80	92	83	82	54	30	776	72·5	7·1
Typhoid Fever .	...	2	...	1	1	...	1	1	1	2		...	9	·8	22·2
Heat Apoplexy	...	..	1	...	3	1	.	1	1	2		..	9	·8	55·5
Dysentery .	20	6	18	17	18	32	24	42	24	22	14	18	255	23·8	10·6
Diarrhœa ..	40	53	83	149	138	136	140	159	92	65	62	50	1,167	109·1	12·8
Hepatitis	4	3	1	3	3	2	2	1	1	3	2	...	25	2·3	..
Spleen Disease ..	4	1	..	2	6	...	3	5	2	2	1	1	27	2·5	..
Respiratory Diseases ..	55	44	56	43	43	34	29	57	58	12	46	11	548	51·2	11·3
Eye Diseases	14	18	39	118	280	200	400	347	141	163	47	15	1,791	167·4	.
Anæmia and Debility .	61	37	38	57	103	96	101	81	75	67	61	56	833	77·9	10·6
Tubercular Diseases	11	5	6	11	18	17	10	3	6	13	5	10	115	10·8	26·1
Meningitis and Hydrocephalus ..	6	3	3	6	4	9	3	4	4	2	1	1	46	4·3	74·0
Convulsion .	10	6	12	18	26	18	14	14	8	13	7	10	156	14·6	87·2
Dentition .	19	20	25	54	48	55	35	51	30	31	24	[illegible]	414	38·7	15·5
Abscess and Ulcer ..	7	8	10	15	20	10	14	16	16	17	5	11	149	14·0	6·4
Injuries	9	14	15	10	16	19	15	11	19	17	8	16	169	15·8	
All other Causes .	21	44	67	57	51	33	40	45	27	41	31	25	482	45·0	
	413	387	602	784	1,173	948	1,099	1,172	774	717	520	436	9,055		
	Admitted per 1,000 of the Average Strength in each Month.														
	40·6	37·6	57·2	73·1	109·4	87·9	101·5	107·6	70·6	68·8	47·5	40·7	846·3		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

III.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS serving in the BENGAL PRESIDENCY during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Death-rate of the Year per 1,000 of Strength.	CAUSES OF DEATHS.														
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Typhoid Fever.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Child-birth and Abortion.	All other Causes.
January ...	3,552	96	27·0	6	...	...	...	...	1	1	...	1	1	...	1	...	...	...	...	1
February ...	3,640	94	25·8	6	...	...	...	...	2	...	...	...	1	...	1	...	...	...	2	...
March ...	3,635	137	37·7	7	...	...	...	...	2	...	...	1	...	...	1	1	1	...	1	...
April ...	3,738	171	45·8	5	...	...	...	...	1	...	...	...	2	...	...	1	...	...	1	...
May ...	3,726	235	63·1	10	...	1	1	...	...	...	1	...	1	...	1	1	...	1	1	2
June ...	3,712	249	67·1	12	...	2	...	...	2	...	1	1	1	2	...	...	1	...	...	2
July ...	3,704	265	71·6	6	...	...	...	...	2	...	...	2	...	...	1	...	1	...	...	...
August ...	3,692	266	72·0	14	...	...	...	...	...	1	...	...	1	4	4	1	...	...	1	2
September ...	3,684	239	64·9	8	...	...	...	...	4	...	...	1	...	...	2	...	...	...	1	...
October ...	3,660	194	53·0	7	...	...	...	...	1	...	...	...	2	...	2	2	...	...	...	...
November ...	3,696	155	41·9	13	...	5	...	...	1	...	...	3	...	1	1	1	...	...	1	...
December ...	3,712	110	29·6	11	...	1	...	...	3	1	...	2	...	...	1	...	...	1	2	...
						9	1	...	19	3	2	11	9	7	15	7	3	2	10	7
						Died per 1,000 of Strength.														
For the year ...	3,680	184	50·0	105	28·53	2·45	·27		5·98		·54	2·99	2·45	1·90	4·08	1·90	·81	·54	2·72	1·90

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	1	...	2	2	...	...	...	...	7	1	13	3·5	69·2
Smallpox ...	...	...	1	...	2	...	...	...	...	...	...	1	4	1·1	25·0
Fever, Intermittent ...	64	39	56	68	103	96	84	127	90	86	78	43	934	253·8	...
" Remittent and Continued ...	18	22	22	60	91	65	61	58	48	49	22	19	535	145·4	3·5
" Typhoid	1	...	...	...	...	1	...	1	1	...	...	2	6	1·6	50·0
Heat Apoplexy ...	...	...	...	...	1	2	...	1	...	...	...	...	4	1·1	50·0
Dysentery ...	8	4	17	7	8	15	12	20	10	12	17	17	147	40·0	7·5
Diarrhœa ...	15	14	16	23	15	25	26	44	22	15	16	12	243	66·0	3·7
Hepatitis ...	3	5	5	10	10	9	7	11	9	10	4	8	91	24·7	7·7
Spleen Disease ...	...	1	1	...	1	...	1	...	...	...	...	...	4	1·1	...
Respiratory Diseases ...	17	7	7	17	23	10	11	11	11	13	11	13	151	41·1	4·6
Phthisis Pulmonalis ...	3	1	4	3	5	5	3	5	5	3	3	5	45	12·2	33·3
Anæmia and Debility ...	38	40	63	83	134	100	100	133	84	100	60	54	989	268·8	...
Rheumatism ..	1	8	5	6	13	8	11	8	6	3	3	1	73	19·8	...
Eye Diseases ...	3	...	11	15	59	36	88	75	23	19	17	2	348	94·6	...
Child-birth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abortion ..	5	12	9	7	12	7	5	5	10	9	5	6	92	25·0	1·1
Diseases peculiar to Women ...	5	12	14	10	16	16	8	20	8	12	6	7	134	36·4	1·0
Abscess and Ulcer ...	6	7	9	10	9	14	9	9	6	6	3	4	92	25·0	
Injuries ...	2	...	3	5	4	5	2	4	3	2	5	...	35	9·5	
All other Causes ...	19	17	31	41	45	43	36	47	29	27	27	12	374	101·6	
	208	189	275	365	553	459	464	579	365	366	284	207	4,314		
	Admitted per 1,000 of the Average Strength in each Month.														
	58·6	51·8	75·7	97·6	148·4	123·7	125·3	156·8	99·1	100·0	76·8	55·8	1172·3		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

IV.

***TABLE** showing the **SICKNESS** and **MORTALITY** among the **CHILDREN** of the **EUROPEAN REGIMENTS** serving in the **BENGAL PRESIDENCY** during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	CAUSES OF DEATHS.																			
						Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Heat Apoplexy.	Dentition.	Convulsion.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.
January ...	5,850	142	24·2	31	5·29	...	...	1	1	1	1	1	...	...	1	4	4		...	1	2	7	3	4	
February ...	5,871	143	24·3	22	3·75	...	...	...	1	..	1	..	.	..	1	2	2	1	...	1	2	3	4	1	3
March ...	5,954	211	35·4	34	5·71	...	..	2	5	2	1	5	...	.	1	4	1	1	.	.	6	2	1	1	2
April ...	6,030	260	43·1	51	8·46	...	...	2	1	...	..	6	1	...	3	10	2	...	..	...	12	7	2	1	4
May ...	6,033	395	65·5	75	12·43	1	...	10	...	2	2	4	.	2	5	8	.	2	...	1	23	4	1	3	1
June ...	6,045	418	69·1	57	9·43	1	...	9	1	...	...	8	..	1	7	8	5	3	. .	2	6	3	...		3
July ...	6,056	495	81·7	41	6·77	...	...	3	1	. .	.	4	..	...	4	6	2	..		...	12	6	3	. .	
August ...	6,092	476	78·1	78	12·80	...	...	1	3	7	1	9	...		10	3	3	4	. .	2	18	9	2	1	5
September ...	6,125	415	67·8	28	4·57	..	...	...	1	..	2	4		1	1	1	1	1	...	3	6	3	1	2	1
October ...	6,108	292	47·8	29	4·75	. .	...	...	1	...	1	2	...	. .	.	4	1	1	.	2	7	4	1	1	4
November ...	6,168	212	34·4	38	6·16	4	...	1	...	...	...	2	.	...	1	3	...	3	...	1	6	6	4	...	4
December ...	6,118	160	26·1	36	5·88	...	...	.	1	...	..	1			2	8	1	2	..	...	8	4	3	1	5
						6	...	29	16	12	9	46	1	4	39	61	22	18	...	13	108	58	28	15	36
						Died per 1,000 of Strength.																			
For the year ...	6,030	302	50·0	520	86·11	1·00	..	4·80	2·65	2·00	9·27			·66	6·46	10·10	3·64	2·98	...	2·15	17·88	9·61	4·61	2·48	5·79

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	..	...	...	..	1	1	..	...	...	...	7	...	9	1·5	66·67
Smallpox ...	1	...	. .	1	...	...		1	...	. .	...	...	3	·5	
Measles ...	6	16	60	35	104	91	31	10	2	2	18	3	368	60·9	7·88
Hooping Cough ...	15	11	16	10	10	14	12	27	15	4	8	21	163	27·0	9·82
Scarlet Fever ...	1	1	13	13	5	3	23	12	..	...	..	..	71	11·8	16·90
Intermittent Fevers ...	30	29	35	54	84	58	61	86	73	77	60	38	703	116·4	1·28
Remittent and Continued Fevers ...	18	18	33	37	76	12	60	71	59	38	34	20	506	83·8	9·09
Typhoid Fever ...	...	1	...	1	1	...	1	1	...	..	...	...	5	·8	20·00
Heat Apoplexy ...	...	...	...	..	3	1		...	1	2	...	...	7	1·2	57·14
Dysentery ...	7	1	7	9	10	16	11	16	11	10	7	5	110	18·2	11·82
Diarrhœa ...	19	21	63	111	95	82	79	112	56	33	15	30	719	124·0	14·42
Hepatitis ...	1	2	1	2	1	1	2	1	...	1	2	...	14	2·3	
Spleen Disease ...	4	1	...	2	5	...	2	5	2	2	1	1	25	4·1	
Respiratory Diseases ...	38	22	35	24	22	9	14	28	23	16	17	19	267	44·2	16·10
Eye Diseases ...	6	2	21	82	254	140	296	229	65	72	20	8	1,204	199·4	
Anæmia and Debility .	30	21	26	35	65	67	63	59	51	40	41	31	538	89·1	10·78
Tubercular Diseases ...	2	1	5	8	8	9	6	2	4	9	4	2	60	9·9	30·00
Meningitis and Hydrocephalus ...	5	3	1	1	2	6	2	3	2	1	...	1	27	4·5	81·48
Convulsion . .	3	4	4	11	11	7	6	5	2	5	5	7	70	11·6	87·14
Dentition ...	12	10	6	25	30	39	21	36	17	14	14	5	229	37·9	17·03
Abscess and Ulcer ...	3	3	5	5	10	5	8	11	10	12	5	6	82	13·6	7·16
Injuries ...	3	5	8	5	11	11	7	8	15	7	5	7	92	15·2	
All other Causes ...	11	36	45	20	33	24	26	25	15	24	17	10	295	48·9	
	230	211	374	500	841	626	731	748	426	369	328	213	5,597		
	Admitted per 1,000 of the Average Strength in each Month.														
	39·3	36·0	62·8	82·9	139·4	103·5	120·7	122·8	69·5	60·4	53·0	34·8	926·8		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

V.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS serving in the MADRAS PRESIDENCY during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Death-rate of the Year per 1,000 of Strength.	Causes of Deaths.														
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Typhoid Fever.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Child-birth and Abortion.	All other Causes.
January ...	1,416	34	24·0	5	...	...	...	...	1	...	...	...	2	...	1	...	...	...	...	1
February ...	1,409	33	23·4	6	.	...	...	...	1	...	...	...	...	..	...	2	...	...	2	1
March ...	1,420	38	26·8	1	.	.	...	...	...	...	...	...	..	..	...	...	...	1	...	...
April ...	1,443	35	24·3	3	..	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1
May ...	1,437	48	33·4	4	...	3	...	...	..	...	..	1	...	...	...	...	...	...	...	...
June ...	1,429	45	31·5	2	...	...	...	...	...	...	...	..	...	1	1	...	..	...	...	...
July ..	1,440	44	30·6	1	...	...	...	..	...	...	...	1	...	...	...	...	...	...	...	...
August ...	1,418	48	33·1	1	.	.	...	..	...	...	...	1	...	...	...	...	.	...	...	...
September ..	1,397	49	35·1	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
October ..	1,338	47	35·1	.	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November ...	1,456	41	28·2	..	..	...	.	..	..	..	...	...	...	...	...	...	...	...	...	...
December ...	1,415	36	25·4	3	..	...	...	...	1	...	...	1	...	...	...	1	...	...	...	...
						3	...	...	3	...	.	4	2	1	3	3	...	1	3	3
						Died per 1,000 of Strength.														
For the year ...	1,421	42	29·5	26	18·30	2·11	...		2·11		...	2·81	1·41	·71	2·11	2·11	...	·71	2·11	2·11

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ..	..	...	...	...	6	...	...	...	...	...	...	...	6	4·2	50·0
Smallpox ...	...	..	...	1	...	1	..	...	...	...	1	...	3	2·1	...
Fever, Intermittent ...	5	10	7	6	14	4	9	14	8	4	6	9	96	67·6	...
" Remittent and Continued ...	7	6	6	14	11	4	5	3	5	4	6	7	77	54·2	3·9
" Typhoid ...	1	...	...	...	..	...	...	..	...	...	...	...	1	·7	...
Heat Apoplexy ...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Dysentery ..	1	5	2	1	7	9	9	7	5	6	4	5	61	42·9	6·6
Diarrhœa ...	4	5	9	4	6	9	6	12	3	7	2	4	71	50·0	2·8
Hepatitis ...	1	3	2	1	...	1	3	1	...	3	3	2	20	14·1	5·0
Spleen Disease ...	...	.	...	...	...	...	...	.	...	...	...	1	1	·7	...
Respiratory Diseases ...	8	6	8	3	3	4	3	6	7	7	10	7	72	50·7	4·2
Phthisis Pulmonalis ..	1	2	2	1	1	...	...	3	...	1	1	2	14	9·8	21·4
Anæmia and Debility ..	23	9	18	25	43	31	28	23	30	31	15	15	291	204·8	...
Rheumatism ...	4	2	...	2	2	1	...	3	..	1	2	...	17	12·0	...
Eye Diseases ..	...	1	2	3	5	15	15	13	11	22	1	1	89	62·6	...
Child-birth ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abortion ..	4	4	3	1	3	3	3	5	...	1	1	5	33	23·2	3·0
Diseases peculiar to Women ..	4	3	8	5	8	6	8	3	7	9	4	2	67	47·1	·8
Abscess and Ulcer ...	2	2	4	4	8	1	5	5	5	3	4	6	49	34·5	
Injuries ..	1	3	4	2	1	1	4	3	1	2	1	2	25	17·6	
All other Causes ...	31	16	17	16	25	25	21	26	15	21	20	16	249	175·2	
	97	77	92	89	143	115	110	127	97	122	80	84	1,242		
	Admitted per 1,000 of the Average Strength in each Month.														
	68·5	54·6	64·8	61·7	99·5	80·5	82·7	87·7	69·4	91·2	54·9	59·4	874·0		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

VI.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMENTS serving in the MADRAS PRESIDENCY during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	Causes of Deaths.																			
						Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Intermittent Fever.	Remittent and Continued Fever.	Typhoid Fever.	Heat Apoplexy.	Dentition.	Convulsion.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.
January ...	2,319	45	19·4	8	3·45	..	..	..		.	..			.	.	1	1	3		2	1	.	.	...	
February ..	2,364	62	22·0	7	3·06			.	1		.		.	.	1	1		2	.	.	1	...	.	.	1
March ..	2,580	44	17·1	9	3·49	.	.			.				1	3	2	1			.	1	...	1	...	...
April ...	2,609	58	22·2	13	4·98		.		.	.	...	..	.	...	1	1	3	1		.	4	2	.		1
May ..	2,573	81	31·5	21	8·16	3	..			1	...	1	.		1	8	1	.			1	5	.	.	...
June ...	2,607	83	31·8	15	5·76	1	...	1	.	..	.	2	.		2	3	1	1	..	...	2	1	...	1	
July ...	2,622	72	27·5	9	3·43		.			.					2	2			.	2	2		1	..	...
August ..	2,643	61	23·1	17	6·43	...	...	1	2	.	.	1		.	1	3		1	.	1	3	3	.	..	1
September ...	2,671	76	28·5	10	3·74	...			.						3	1	1	.	..	1	1		2		1
October ..	2,578	66	25·6	8	3·10	...	..		.	..	.		.	.	1	2		1	..	..	.	2	2	.	..
November ...	2,498	46	18·4	5	2·00	...			.			1		..		..	...	.	.		...	1	1	..	2
December .	2,340	51	21·8	5	2·14	.	.			1		...		.		2	.		...	..		...	1	..	1
						4	...	2	3	2	.	5	.	1	15	26	8	9	..	6	16	14	8	1	7
						Died per 1,000 of Strength.																			
For the year ..	2,534	61	24·1	127	50·12	1·58	.	·79	1·19	·79		1·97		·39	5·92	10·26	3·16	3·55	.	2·37	6·31	5·53	3·16	·39	2·76

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	8	2	..	..		...	.	..	10	3·9	40·0
Smallpox ..	...	...	.	.	...	...	.	...	..	..	...	.		...	..
Measles	.	...	...	5	51	9	3	17	25	7	5	21	143	56·4	1·4
Hooping Cough ..	...	1	4	3	3	1	3	...	..	1	3	13	38	15·0	8·0
Scarlet Fever ...	...		...	2	4	2	...					3	11	4·3	18·2
Intermittent Fevers .	11	4	16	9	4	8	11	23	6	8	2	4	109	43·0	...
Remittent and Continued Fevers ..	9	12	13	10	15	12	6	10	18	20	4	6	135	53·3	3·7
Typhoid Fever .	.	.		.	.	...	...	..	.	...	.		..	..	...
Heat Apoplexy ...	...		1	.	...	.	..	..	.	.	.		1	·4	...
Dysentery ...	12	5	7	7	5	13	10	15	7	9	5	11	106	41·8	5·7
Diarrhœa ...	12	15	8	17	12	29	39	28	19	14	8	8	209	82·5	7·7
Hepatitis	2	1	.	.	1	1		..	1	1	.	.	7	2·8	...
Spleen Disease ...	...	...	..	.	..	..	..	..	...	...	.		.	...	..
Respiratory Diseases	11	14	12	13	12	22	9	16	28	21	20	15	193	76·2	4·7
Eye Diseases ...	5	9	15	13	24	17	41	45	33	51	8	1	292	115·2	..
Anæmia and Debility	21	10	8	18	33	23	26	9	12	21	13	13	207	81·7	6·8
Tubercular Diseases	7	2	1	3	8	4	2	..	2	4	1	6	40	15·8	22·5
Meningitis and Hydrocephalus .	1	...	2	4	1	2	1	..	2	...	...	...	13	5·1	61·5
Convulsion ..	3	1	3	1	9	4	3	5	2	2	1	1	35	13·8	74·3
Dentition ...	1	6	16	13	15	11	4	5	6	6	4	.	94	37·1	16·0
Abscess and Ulcer .	2	2	4	5	7	2	5	4	1	2	.	1	41	16·2	3·6
Injuries .	1	5	4	4	3	4	4	1	2	5	2	8	43	17·0	
All other Causes .	6	6	12	20	9	5	7	8	5	13	10	11	112	44·2	
	107	93	126	147	224	201	174	186	171	188	86	133	1,839		
	Admitted per 1,000 of the Average Strength in each Month.														
	46·1	39·3	48·8	56·3	87·1	78·3	66·4	68·5	64·0	72·9	34·4	56·8	725·7		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

VII.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS serving in the BOMBAY PRESIDENCY during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Death-rate of the Year per 1,000 of Strength.	Causes of Deaths.														
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Typhoid Fever.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Child-birth and Abortion.	All other Causes.
January ...	1,190	28	23·5	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
February .	1,246	22	17·7	1	...	...	...	...	...	1	...	...	.	...	...	...	...	...	...	...
March ..	1,207	26	21·6	1	...	...	...	...	...	...	...	...	.	...	...	...	...	...	...	1
April ...	1,308	37	28·3	2	...	...	..	..	...	...	1	...	...	...	...	...	...	...	...	1
May ..	1,311	33	25·2	1	...	...	...	...	...	..	...	...	...	...	...	...	..	...	...	1
June ...	1,306	31	23·7	3	...	...	..	...	3	...	..	...	...	...	...	...	...	...	...	...
July ...	1,301	56	43·0	1	..	...	..	...	1	...	...	...	...	...	..	..	..	...	...	..
August ...	1,302	60	46·1	4	...	...	...	...	...	...	...	...	..	1	3		...	...	...	...
September ...	1,300	53	40·8	4	...	...	..	...	...	...	..	1	...	...	...	...	1	...	1	1
October ...	1,290	49	38·0	2	...	..	...	...	...	...	...	...	..	1	..	...	...	..	1	...
November ..	1,329	38	28·6	2	...	..	...	...	1	...	...	...	...	...	...	...	...	...	1	...
December ...	1,301	24	18·4	1	...	...	...	..	...	...	...	1	...	...	..	...	...	...	...	...
						..	...	...	5	1	1	3	...	2	3	...	1	...	3	4
						Died per 1,000 of Strength.														
For the year ...	1,283	38	29·6	23	17·93	...	...	4·68			·78	2·34	.	1·56	2·34	...	·78	...	2·34	3·11

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ..	..	...	.	...	..	..		...	..	.	...	...	..		...
Smallpox ...	..	...	...	...	.	..	...	...		...	...	...	...	...	...
Fever, Intermittent ..	18	17	26	23	28	36	37	56	30	60	16	20	367	286·0	...
„ Remittent and Continued ...	6	6	13	20	19	11	20	11	9	8	17	7	147	114·6	3·4
„ Typhoid .		1	...	..	.	..	...	...	..	1	...	...	2	1·6	50·0
Heat Apoplexy ...		...	..	1	..		...	...		1	..	..	2	1·6	50·0
Dysentery ...	5	..	4	2	2	4	6	8	3	3	2	6	45	35·0	6·7
Diarrhœa .	2	8	3	12	2	6	5	5	6	2	1	2	54	42·1	...
Hepatitis .	..	3	2	1	2	3	4	3	...	3	1	2	24	18·7	8·3
Spleen Disease ...	..	...	..	...		...	...	2	..	.	...	..	2	1·6	...
Respiratory Diseases ...	12	4	5	3	1	2	2	7	4	4	1	2	47	36·6	...
Phthisis Pulmonalis ..	...	1	...	1		1	3	2	1		1	...	10	7·8	30·0
Atrophy and Anæmia ...	1	4	4	8	6	5	12	12	10	9	8	2	81	63·1	...
Rheumatism ..	1	2	...	4	...	1	...	3	4	...	1	1	17	13·3	...
Eye Diseases ..	3	...	1	4	4	4	13	21	17	12	1	2	85	66·2	...
Child-birth ...	..	...	...	...	..	.	...	..	..	...	...	.	..	...	...
Abortion ..	3	2	1	1	4	3	2	4	3	1	4	.	31	24·2	3·2
Diseases peculiar to Women .	3	2	6	4	8	3	4	1	3	6	3	..	43	33·5	1·7
Abscess and Ulcer ...	1	1	2	1	2	3	4	4	3	...	2	2	25	19·5	
Injuries ..	2	1	...	2	..	1	2	1	...	...	1	.	10	7·8	
All other Causes ...	9	14	7	18	9	11	27*	30*	16	10	8	1	160	124·7	
	66	66	74	108	87	94	141	173	109	120	67	47	1,152		
	Admitted per 1,000 of the Average Strength in each Month.														
	55·5	53·0	61·3	82·6	66·4	72·0	108·4	132·9	83·8	93·0	50·4	36·1	897·9		

* Dengue Fever at Aden.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

VIII.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMENTS serving in the BOMBAY PRESIDENCY during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Heat Apoplexy.	Dentition.	Convulsion.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.
January ...	1,981	39	19·7	10	5·05	...	...	...	...	...	...	..	..	...	...	4	...	..	...	2	2	.	1	..	1
February ...	2,057	52	25·3	6	2·92	...	...	...	...	1	...	1	1	..	...	1	...	...	..	.	1	..	..		1
March ...	1,990	40	24·6	11	5·53	...	..	2	..	...	.	...	...	...	...	6	...	...	..	2	1			..	...
April ...	2,080	58	27·8	14	6·70	...	...	...	...	1	...	...	.	...	2	6	..	..		..	3	1	1		...
May ...	2,112	64	30·3	16	7·10	...	..	...	..	...	1	...	.	..	1	5	2	...	..	...	3	2	1		...
June ...	2,138	56	26·2	12	5·61	...	...	...	...	...	...	...	...	...	1	6	1	1	...	.	1	2	1		..
July ..	2,151	77	35·8	23	10·69	..	..	1	...	1	...	1	...	...	3	5	...	...	..	.	5	2	2	1	2
August ...	2,154	93	43·2	23	10·68	...	...	...	...	...	1	1	...	..	2	4	..	1	..	2	6	1	...	..	2
September ...	2,166	80	37·0	8	3·70	...	.	.	.	..	...	..	...	..	...	3	...	.	.	...	2	1	1	..	1
October ...	2,173	76	35·0	10	4·60	...	...	...	...	...	...	...	..	...	...	6	...		...	2	.	2	...	...	...
November ...	2,257	63	27·9	7	3·10	...	...	...	.	..	...	1	..	...	1	1	1	..	...	..	..	1	1	..	1
December ...	2,256	41	18·2	8	3·54	...	..	..	..	...	.	..	...	...	...	3	...	1	...	...	1	1	..	1	1
						..	...	3	...	3	2	4	1	...	10	49	4	3	..	8	25	16	8	2	9
						Died per 1,000 of Strength.																			
For the year ...	2,127	62	29·1	147	69·11	...	...	1·41	...	1·41	3·29			...	4·70	23·04	1·88	1·41	...	3·76	11·76	7·52	3·76	·94	4·23

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles ...	1	8	8	4	4	4	5	2	1	1	4	10	52	24·5	5·8
Hooping Cough ...	...	5	1	...	...	...	1	..	2	6	...	. .	15	7·1	...
Scarlet Fever ..	...	2	3	4	...	...	10*	9*	...	...	...	..	28	13·2	10·7
Intermittent Fevers	15	12	19	21	9	33	28	55	62	51	36	20	361	169·7	·6
Remittent and Continued Fevers ...	13	4	17	15	8	3	14	11	6	24	16	4	135	63·5	3·0
Typhoid Fever ...	...	1	...	..	...	...	...	...	1	2	...	...	4	1·8	25·0
Heat Apoplexy ...	...	...	...	...	...	...	...	1	...	...	...	...	1	·5	...
Dysentery ...	1	...	4	1	3	3	3	11	6	3	2	2	39	18·3	20·5
Diarrhœa ...	9	14	12	21	31	25	22	19	17	18	9	12	209	98·2	12·0
Hepatitis ...	1	...	...	1	1	...	...	...	...	1	...	...	4	1·8	...
Spleen Disease ...	...	...	...	...	1	...	1	...	...	...	...	...	2	·9	...
Respiratory Diseases ...	6	8	9	6	9	3	6	13	7	5	9	7	88	41·4	11·4
Eye Diseases ...	3	7	3	23	11	13	63	73	13	10	10	6	295	138·7	...
Anæmia and Debility ...	4	6	4	4	5	6	12	13	9	6	7	12	88	41·4	18·2
Tubercular Diseases .	2	2	...	...	2	4	2	1	..	...	...	2	15	7·1	20·0
Meningitis and Hydrocephalus ...	...	...	...	1	1	1	...	1	...	1	1	...	6	2·8	66·7
Convulsion ...	4	1	5	6	6	7	5	4	4	6	1	2	51	24·0	96·1
Dentition ..	6	4	3	10	3	5	10	10	8	14	6	6	91	42·8	11·0
Abscess and Ulcer ...	2	3	1	5	3	3	1	1	2	3	...	2	26	12·2	
Injuries ...	5	4	3	1	2	4	4	2	2	5	1	1	34	16·0	6·7
All other Causes ...	4	2	10	8	9	4	7	12	7	4	4	4	75	35·3	
	76	83	102	137	108	118	194	238	177	190	106	90	1,619		
	Admitted per 1,000 of the Average Strength in each Month.														
	38·4	40·4	51·3	65·6	51·1	55·2	90·2	110·5	81·7	87·4	47·0	39·9	761·2		

* Dengue Fever at Aden.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

IX.

TABLE showing the DISTRIBUTION by STATIONS of the DEATHS of the WOMEN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of occupation.	Causes of Deaths.															Total Deaths of the Year.	Died per 1,000 of Strength.		
		Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Child-birth and Abortion.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Presidency Depôt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bengal Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women on the march	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Fort William	99	...	...	...	...	...	...	...	...	...	2	...*	...	...	...	...	2	...	20·20	20·20
Dum-Dum	64	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	15·62	15·62
Barrackpore	56	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	2	...	35·72	35·72
	219			...	...			...	...	1	2		...	1	1	...	5	...	22·83	22·83
Hazareebaugh	87	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	22·99	11·49	34·48
Dinapore	100	1	...	...	1	...	...	1	1	...	...	...	...	...	...	...	4	10·00	30·00	40·00
Benares	61	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chunar	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	80	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	12·50	12·50
Lucknow	279	5	...	...	...	...	...	1	...	...	1	...	...	...	...	...	7	17·92	7·17	25·09
Seetapore	62	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	16·13	16·13
Futtehghur	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	90	1	...	...	1	...	...	...	1	...	1	...	...	...	...	...	4	11·11	33·33	44·44
Allahabad	72	...	...	...	...	1	...	...	...	1	1	...	...	...	...	...	3	...	41·67	41·67
	847	9		...	3	1	...	2	2	1	4	...	1	...	...	...	23	10·63	16·52	27·15
Shahjehanpore	47	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	21·28	21·28
Bareilly	59	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	33·90	33·90
Moradabad	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	196	...	...	...	...	...	...	1	1	...	2	1	...	...	1	1	7	...	35·71	35·71
Delhi	53	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	3	...	56·60	56·60
Muttra	52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	470	...	1	...	...	1	...	3	1	...	3	2		...	1	1	13	...	27·66	27·66
Agra	103	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	3	...	29·13	29·13
Morar	119	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	8·40	8·40
Gwalior Citadel	33	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	30·30	30·30
Jhansi	42	...	...	...	2	...	...	1	...	...	...	1	...	...	...	...	4	...	95·24	95·24
Nowgong	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	68	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	14·71	14·71
Jubbulpore	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	415	...		...	4	1	...	1	...		1	2	...	...	1	...	10	...	24·10	24·10
Umballa	130	...	...	...	...	...	...	1	...	...	1	1	...	...	...	1	4	...	30·77	30·77
Jullundur	94	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	3	...	31·91	31·91
Ferozepore	135	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2	...	14·81	14·81
Mooltan	115	...	...	...	2	...	...	...	...	2	...	1	...	...	2	...	7	...	60·87	60·87
Sealkote	137	...	...	...	2	...	1	2	...	...	...	...	1	...	1	...	7	...	51·10	51·10
Umritsur	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	129	...	...	...	1	...	...	...	1	...	...	1	...	...	1	1	5	...	38·76	38·76
Rawulpindee	121	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	16·53	16·53
Campbellpore	30	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	2	...	66·67	66·67
Attock	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	51	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...	39·22	39·22
Peshawur Cherat*	180	...	...	...	3	...	...	1	...	...	...	...	1	...	1	...	6	...	33·33	33·33
	1,135			...	10	...	2	4	3	3	3	3	2	...	6	4	40	...	35·24	35·24
Darjeeling	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet	28	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	35·71	35·71
Chuckrata	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie	61	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	2	...	32·79	32·79
Dugshaie	98	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	2	...	20·41	20·41
Subathoo	80	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	4	...	50·00	50·00
Jutogh	4	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	2	...	...	...
Dhurmsalla	6	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Dalhousie	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumba	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Huzara	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree (6 months)	135	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
	500		...	...	1		...	1	3	2	2	...	...	1	1	2	13	...	26·00	26·00
	3,680	9	1	...	19	3	2	11	9	7	15	7	3	2	10	7	105	2·45	26·08	28·53

* No deaths occurred among women at Cherat.

STATIONS.	Average Strength for the period of occupation.	Causes of Deaths. Cholera.	Smallpox.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.	Total Deaths of the Year.	Died per 1,000 of Strength. A. Cholera.	B. All other Causes.	C. All Causes.
Women marching, Bombay Presidency ...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Deolalee Depôt, Bombay Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona Depôt „ ...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt „ ...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women marching, Madras Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts ...	35	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...
Deolalee Depôt, Madras Troops ...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Poona and Bombay Depôts „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	71	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	3	...	42·25	42·25
Neemuch ...	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	33·33	33·33
Indore ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow ...	210	...	...	...	1	1	...	1	...	...	2	...	...	...	...	1	6	...	28·57	28·57
Deesa ...	118	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	2	...	16·95	16·95
Ahmedabad and Baroda ...	38	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	2	...	52·63	52·63
Kurrachee and Ghizree ...	106	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	9·43	9·43
Hyderabad ...	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden ...	67	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...	29·85	29·85
	664	...	...	...	5	1	...	1	...	1	3	...	...	...	3	3	17	...	25·60	25·60
Bombay ...	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	98	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	2	...	20·41	20·41
Poona and Kirkee ...	250	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	2	...	8·00	8·00
Sattara ...	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum ...	107	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	9·34	9·34
Secunderabad ...	226	2	...	...	...	...	...	2	1	...	...	...	...	...	1	...	6	8·85	17·70	26·55
Kamptee ...	151	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	6·62	6·62
	914	2	...	...	...	...	1	3	2	1	...	...	1	...	1	1	12	2·19	10·94	13·13
Madras ..	106	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount ..	76	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	13·16	...	13·16
Bellary ...	108	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	3	...	27·78	27·78
Trichinopoly ...	40	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...	50·00	50·00
Bangalore ...	231	...	...	...	...	...	...	1	...	1	1	...	...	...	...	1	4	...	17·32	17·32
Cannanore ...	103	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	2	...	23·81	
Malliapoorum ...	13	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...		23·81
Calicut ...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	687	1	...	...	1	...	...	1	...	1	3	2	...	1	2	1	13	1·46	17·46	18·92
Rangoon .	104	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	9·62	9·62
Toungoo ...	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo ...	56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	207	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	4·83	4·83
Mount Aboo ...	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	72	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	27·78	27·78
	106	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	18·87	18·87
Army of Bengal ...	3,680	9	1	...	19	3	2	11	9	7	15	7	3	2	10	7	105	2·45	26·08	28·53
Army of Madras ...	1,421	3	...	...	3	...	...	4	2	1	3	3	...	1	3	3	26	2·11	16·19	18·30
Army of Bombay ..	1,283	...	...	...	5	1	1	3	...	2	3	...	1	...	3	4	23	...	17·93	17·93
Army of India ..	6,384	12	1	...	27	4	3	18	11	10	21	10	4	3	16	14	154	1·88	22·24	24·12

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

X.

TABLE showing the DISTRIBUTION by STATIONS of the DEATHS of the CHILDREN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of observation.	Causes of Deaths.																				Total Deaths of the Year.	Died per 1,000 of Strength.		
		Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fever.	Heat Apoplexy.	Dentition.	Convulsion.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Presidency Depôt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bengal Troops.		...	...	...	...	1	...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	4	...	...	...
Children on the march		...	...	1	...	...	...	...	...	...	1	3	2	1	...	...	3	1	3	...	2	17	...	...	...
Fort William	174	...	...	...	...	...	...	1	...	...	...	2	...	1	...	...	2	1	...	...	...	7	...	40·23	40·23
Dum-Dum	115	...	...	...	...	...	...	1	...	...	...	3	...	...	...	...	3	1	1	...	...	9	...	78·26	78·26
Barrackpore	107	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	1	...	1	5	...	46·73	46·73
	396	...	...	...	...	...	...	2	...	...	...	6	...	2	...	...	6	2	2	...	1	21	...	53·03	53·03
Hazareebaugh	113	...	...	...	...	...	...	2	...	...	1	1	2	...	...	...	5	2	...	...	4	17	...	150·44	150·44
Dinapore	200	...	...	...	...	...	...	1	...	...	3	1	...	...	...	...	5	2	...	...	3	15	...	75·00	75·00
Benares	114	...	...	...	...	...	...	1	...	...	...	1	1	...	...	...	6	...	1	...	2	12	...	105·26	105·26
Chunar	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	123	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	1	1	5	...	40·65	40·65
Lucknow	448	4	...	5	1	...	...	3	...	...	5	5	2	...	...	2	10	5	1	...	...	43	8·93	87·05	95·98
Seetapore	117	...	...	...	...	...	...	1	...	...	1	1	1	...	...	...	1	...	...	...	1	6	...	51·28	51·28
Futteghur	31	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	32·26	32·26
Cawnpore	115	...	...	2	...	...	...	...	1	...	3	2	...	...	...	2	5	1	...	...	1	17	...	147·83	147·83
Allahabad	124	1	...	1	...	...	1	1	...	...	...	4	...	1	...	1	1	1	...	1	...	13	8·06	96·78	104·84
	1,393	5	...	8	1	...	1	9	1	...	13	15	7	1	...	5	35	12	2	2	12	129	3·59	89·02	92·61
Shahjehanpore	62	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	1	...	...	...	4	...	64·52	64·52
Bareilly	105	...	...	1	...	...	...	1	...	...	...	5	...	...	...	...	1	...	...	...	...	8	...	76·19	76·19
Moradabad	32	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	31·25	31·25
Roorkee	71	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	14·08	14·08
Meerut	371	...	...	2	...	...	...	3	...	...	6	1	3	1	...	2	4	7	3	...	5	37	...	99·73	99·73
Delhi	80	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	2	...	...	1	1	6	...	75·00	75·00
Muttra	99	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	1	1	5	...	50·50	50·50
	820	...	...	4	...	...	...	6	...	...	9	8	3	2	...	3	7	8	3	2	7	62	...	75·61	75·61
Agra	118	...	...	...	...	...	...	2	...	...	1	3	...	1	...	...	4	...	...	...	1	12	...	101·70	101·70
Morar	213	1	...	...	...	...	...	1	...	1	2	2	2	...	...	...	2	1	1	...	...	13	4·69	56·34	61·03
Gwalior Citadel	62	...	...	...	...	...	...	2	...	1	1	...	...	...	...	...	...	3	...	...	...	7	...	112·90	112·90
Jhansi	87	...	...	...	...	...	2	...	...	...	1	...	...	...	...	1	...	3	...	1	1	9	...	103·45	103·45
Nowgong	38	...	...	...	...	...	...	3	...	...	2	...	...	...	...	...	...	...	...	...	...	5	...	131·58	131·58
Saugor	101	...	...	...	1	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	4	...	39·60	39·60
Jubbulpore	63	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	4	...	63·49	63·49
	682	1	...	...	1	...	2	8	...	2	7	6	2	2	...	1	10	8	1	1	2	54	1·47	77·71	79·18
Umballa	149	...	...	...	...	1	...	5	...	...	...	...	...	...	...	...	6	...	3	1	1	17	...	114·10	114·10
Jullundur	126	...	...	...	...	3	...	1	...	...	...	2	1	2	...	...	3	2	1	2	1	18	...	142·86	142·86
Ferozepore	179	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	9	3	2	...	...	16	...	89·39	89·39
Mooltan	189	...	...	...	...	...	...	7	...	...	...	4	...	2	...	...	3	5	...	...	1	22	...	116·40	116·40
Sealkote	272	...	...	...	...	1	...	1	...	1	2	1	1	...	...	...	1	4	...	...	...	12	...	44·12	44·12
Umritsur	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	83·33	83·33
Fort Lahore	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	200	...	...	...	...	6	...	2	...	...	1	1	...	...	...	...	1	...	...	2	2	15	...	75·00	75·00
Rawulpindee	182	...	...	...	...	...	...	1	...	1	...	2	...	1	...	...	1	1	2	...	2	11	...	60·44	60·44
Campbellpore	56	...	...	...	...	...	...	2	...	...	...	1	2	...	...	...	3	...	1	...	...	9	...	160·72	160·72
Attock	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	84	...	...	...	...	...	5	...	...	...	...	1	...	...	...	1	2	1	1	...	...	11	...	130·95	130·95
Peshawur	211	...	...	5	...	...	...	2	...	...	...	5	...	2	...	1	5	1	2	3	2	28	...	130·95	130·95
Cherat (4 months)	30	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	2	...	...	...	...	5			
	1,711	...	...	5	...	11	5	21	...	2	3	19	6	8	...	2	37	17	12	8	9	165	...	96·43	96·43
Darjeeling	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	43·48	43·48
Nynee Tal	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	36·36	36·36
Chuckrata	191	...	...	...	6	...	...	...	...	...	1	1	1	...	...	...	...	1	1	1	1	13	...	68·06	68·06
Kussowlie	121	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	4	2	...	...	1	9	...	74·38	74·38
Dugshaie	151	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	3	3	1	...	...	9	...	59·60	59·60
Subathoo	125	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	2	1	...	...	7	...	56·00	56·00
Jutogh	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumba	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Huzara	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree (6 months)	265	...	...	11	7	...	1	...	...	...	4	1	...	...	...	...	1	...	2	...	...	27	...	101·89	101·89
	890	...	...	11	14	...	1	...	...	...	6	4	1	1	...	2	9	10	5	2	2	68	...	76·40	76·40
	6,039	6	...	29	16	12	9	46	1	4	39	61	22	18	...	13	108	58	28	15	35	520	1·00	85·11	86·11

STATIONS.	Average Strength for the period of observation.	Causes of Deaths.																				Total Deaths of the Year.	Died per 1,000 of Strength.		
		Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Typhoid Fevers.	Heat Apoplexy.	Dentition.	Convulsion.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Children marching, Bombay Presidency	...											1										1			
Deolalee Depôt, Bombay Troops	...					1																1	...		
Poona Depôt "	18																	1	1			2	...		
Colaba Depôt "	13																					...	...		
Children marching, Madras, Presidency	...																					...	...	...	...
Poonamallee and Presidency Depôt	71			1													1					2			
Deolalee Depôt, Madras Troops	...																		1			1			...
Poona and Bombay Depôts "																									
Nusseerabad	107						1					3				1	2	3			1	11	...	102·80	102·80
Neemuch	52										2	1							1			4		76·92	76·92
Indore	..																					..	...		...
Mhow	368			1			1				1	8	1				5	3			1	21		57·06	57·06
Deesa	235										1	13	1	1		3	6	1	1			27		114·93	114·93
Ahmedabad and Baroda	78							1				4					1					6		76·92	76·92
Kurrachee and Ghizree	127							1								1	4	2	2		1	11		86·61	86·61
Hyderabad	30										1											1	...	33·33	33·33
Aden	121							1			2	3				1		1				8		66·12	66·12
	1,118			1			2	3			7	32	2	1		6	18	10	4		3	89	...	79·61	79·61
Bombay	88										1	1						2	1			5		56·82	56·82
Asseerghur	5																1					1		..	..
Ahmednuggur	145							1				3	1				1		1		2	9	...	62·07	62·07
Poona and Kirkee	389			2		2			1		1	10	1	2		1	2	3		1		26		66·84	66·84
Sattara	35																				1	1	...	28·57	28·57
Belgaum	197											2				1	3		1	1	3	11	...	55·84	55·84
Secunderabad	405	4									5	4		1		1	3	3	1	1	2	25	9·88	51·85	61·73
Kamptee	257				1	1		5				2		2		1	2		1			15		58·37	58·37
	1,521	4		2	1	3		6	1		7	22	2	5		4	12	8	5	3	8	93	2·63	58·51	61·14
Madras	171				1						1	3		1				2				8	...	46·78	46·78
St. Thomas' Mount	154									1	2	1					1	1			1	7		45·45	45·45
Bellary	203											2		3		1	3		1			10	...	49·26	49·26
Trichinopoly	65											1					1					2		30·77	30·77
Bangalore	430					1					3	2		1				2	1		2	12	...	27·91	27·91
Cannanore	169											4	2					3	2		1	12	...	64·52	64·52
Malliapoorum	18																								
Calicut	9																								
	1,209				1	1				1	6	13	2	5		1	5	8	4		4	51	...	42·18	42·18
Rangoon	203				1						1	4	4	1		3	3	1	1		1	20	..	98·52	98·52
Toungoo	76										1											1	...	13·17	13·17
Thayetmyo	118										2	3	1				2					8	...	67·80	67·80
Port Blair	19																					...		..	...
	416				1						4	7	5	1		3	5	1	1		1	29	...	69·71	69·71
Mount Aboo	38																					...	...	...	..
Poorundhur	13										1											1	...	...	...
Ramandroog	15																					...	...	...	...
Wellington	152			1									1					2				4		26·32	26·32
	218			1							1		1					2				5	..	...	...
Army of Bengal	6,039	6	...	29	16	12	9	46	1	4	39	61	22	18	.	13	108	58	28	15	35	520	1·00	85·11	86·11
Army of Madras	2,534	4	...	2	3	2	...	5	...	1	15	26	8	9	...	6	16	14	8	1	7	127	1·58	48·54	50·12
Army of Bombay	2,127	..	...	3	..	3	2	4	1	..	10	49	4	3	...	8	25	16	8	2	9	147	...	69·11	69·11
Army of India	10,700	10	...	34	19	17	11	55	2	5	64	136	34	30	...	27	149	88	44	18	51	794	·93	73·28	74·21

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

XI.

TABLE showing the DISTRIBUTION by STATIONS of the CHOLERA of the WOMEN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of observation.	Number of Admissions from Cholera in each Month.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Presidency Depôt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bengal Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women on the march	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	90	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore	56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	210	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazareebaugh	87	...	...	...	...	...	2	...	...	...	...	...	...	2	2	...
Dinapore	100	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...
Benares	61	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chunar	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow	279	...	...	...	...	...	...	...	...	...	...	7	...	7	5	...
Seetapore	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	90	...	...	...	...	2	...	...	...	...	...	...	...	2	1	...
Allahabad	72	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
	847	...	...	1	...	2	2	...	...	...	...	7	1	13	9	10·63
Shahjehanpore	47	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly	59	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	196	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Delhi	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra	52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	470	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra	103	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar	119	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel	33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	68	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	415	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umballa	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	94	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	137	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	129	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindee	121	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	61	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur Cherat	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet	28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie	61	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshaie	98	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jutogh	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumba	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Huzara	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree (6 months)	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	500	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	3,680	...	...	1	...	2	2	...	...	...	...	7	1	13	9	2·45

STATIONS.	Average Strength for the period of observation.	Number of Admissions from Cholera in each Month.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Women marching, Bombay Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona Depôt " ...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt " ...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women marching, Madras Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôt ...	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Madras Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neemuch ...	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indore ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow ...	210	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deesa ...	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda ...	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree ...	106	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad ...	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden ...	67	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	664	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bombay ...	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	98	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Kirkee ...	250	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sattara ...	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum ...	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad ...	226	...	...	...	...	5	...	...	...	...	...	...	...	5	2	...
Kamptee ...	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	914	...	...	...	...	5	...	...	...	...	...	...	...	5	2	...
Madras ...	106	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount ...	76	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...
Bellary ...	108	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly ...	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore ...	231	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cannanore ...	103	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mallapoorum ...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut ...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	687	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...
Rangoon ...	104	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungoo ...	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo ...	56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	207	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo ...	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	72	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	106	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Army of Bengal ...	3,680	...	...	1	...	2	2	...	...	...	...	7	1	13	9	2·45
Army of Madras ...	1,421	...	...	...	...	6	...	...	...	...	...	...	...	6	3	2·11
Army of Bombay ...	1,283	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Army of India ...	6,384	...	...	1	...	8	2	...	...	...	...	7	1	19	12	1·88

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

XII.

TABLE showing the DISTRIBUTION by STATIONS of the CHOLERA of the CHILDREN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of observation.	Number of Admissions from Cholera in each Month.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Presidency Depôt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bengal Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Children on the march	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	174	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	396	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazareebaugh	113	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore	200	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares	114	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chunar	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	123	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow	448	...	...	...	...	...	...	...	...	...	...	7	...	7	4	...
Seetapore	117	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Allahabad	124		...	...	...	1	...	...	...	...	...	...	...	1	1	...
	1,393	...	...	...	...	1	...	...	...	...	...	7	...	8	5	3·59
Shahjehanpore	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	371	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Delhi	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	820	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar	213	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...
Gwalior Citadel	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	87	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	101	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	63	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	682	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...
Umballa	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	126	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore	179	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	189	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	272	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	200	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindee	182	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	84	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cherat (4 months)	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,711	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata	101	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie	121	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshaie	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo	125	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jutogh	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumba	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Huzara	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree (6 months)	265	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	890	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	6,039	...	...	...	...	1	1	...	...	...	...	7	...	9	6	1·00

STATIONS.	Average Strength for the period of observation.	Number of Admissions from Cholera in each Month.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Children marching, Bombay Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona Depôt "	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt "	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Children marching, Madras Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nussecrabad	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neemuch	52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow	368	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deesa	235	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda	78	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree	127	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden	121	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bombay	88	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur	145	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Kirkee	389	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sattara	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum	197	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad	405	...	...	...	...	8	2	...	...	...	...	...	...	10	4	...
Kamptee	257	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,521	...	...	...	...	8	2	...	...	...	...	...	...	10	4	...
Madras	171	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount	154	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bellary	203	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly	65	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore	430	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cannanore	159	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mallipoorum	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,209	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rangoon	203	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungoo	76	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	416	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington	152	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	218	...	...	...		...	...	...	...	...	...	...	...	...	...	...
Army of Bengal	6,030	...	...	...	...	1	1	...	...	...		7	...	9	6	1·00
Army of Madras	2,534	...	...	...	...	8	2	...	...	...	...	...	...	10	4	1·58
Army of Bombay	2,127	...	...		...		...	...	...	...	...	...	...	...	...	...
Army of India	10,700		...	...	...	9	3		...	...	...	7	...	19	10	·93

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1871.

XIII.

DETAIL of the CAUSES of the ADMISSIONS and DEATHS of the WOMEN of EUROPEAN REGIMENTS.

Women of the Army of Bengal—Strength ... 3,680		Admission-rate per 1,000 ... 1172·3	Death-rate per 1,000 ... 28·53
„ „ Madras „ ... 1,421		„ „ ... 874·0	„ „ ... 18·30
„ „ Bombay „ ... 1,283		„ „ ... 897·9	„ „ ... 17·93
„ „ India „ ... 6,384		„ „ ... 1050·8	„ „ ... 24·12

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL.		MADRAS.		BOMBAY.		ARMY OF INDIA.			
									RATIO PER 1,000 OF STRENGTH.	
	Admitted.	Died.	Admitted.	Died.	Admitted	Died.	Admitted.	Died.	Admitted.	Died.
Cholera	13	9	6	3	...	..	19	12	3·0	1·88
Smallpox	4	1	3	...	...	...	7	1	1·1	·16
Measles	2	...	2	...	...	..	4	...	...	...
Hooping Cough	...	...	...	...	2	...	2	...	...	...
Scarlet Fever	1	1	2	..	1	...	4	1	...	...
Dengue Fever	...	...	...	...	21	..	21	...	...	...
Erysipelas	13	1	1	...	1	...	15	1	...	...
Pyæmia (following Craniotomy)	1	1	...	..	...	...	1	1	...	...
Typhoid Fever	6	3	1	.	2	1	9	4	1·4	4·86
Intermittent Fevers	934	...	96	...	367	...	1,397	...	218·8	
Remittent and Continued Fevers	535	19	77	3	147	5	759	27	118·9	
Rheumatism	73	.	17	...	17	..	107	...	16·8	...
Secondary Syphilis	1		2	..	4	...	7	...	...	...
Scrofula	1	...	...	...	1	...	2	..	...	...
Phthisis Pulmonalis	45	15	14	3	10	3	69	21	10·8	3·29
Anæmia	310	...	24	...	24	...	358	...	...	...
Anasarca	2	.	...	...	1	..	3	...	...	...
Cancer of Uterus	1	1	.	..	..	...	1	1	...	...
Meningitis	...	.		...	2	2	2	2	...	...
Heat Apoplexy	4	2	...	.	2	1	6	3	·9	·47
Hemiplegia	2	...	1		...	...	3	...	...	...
Epilepsy	8	...	.	.	1	...	9	..	...	...
Chorea	1	..	..	..	...	.	1	...	...	...
Mania and Dementia	6	...	1	1	...	...	7	1	...	...
Neuralgia	19	...	11	...	14	...	44	...	...	...
Ophthalmia	348	...	89	.	85	...	522	...	81·8	...
Otitis	6	...	3	...	1	...	10	..	...	...
Pericarditis	1	...	1	1	1	1	3	2	...	...
Heart disease	8	3	..	...	2	1	10	4	...	·63
Aortic Aneurism	1	..	...	..	...	...	1	...	...	...
Palpitation	8	...	1	.	3	...	12	...	...	...
Syncope	1	1	...	..	...	..	1	1	...	...
Varix	5	...	2	.	...	..	7	...	...	...
Tonsillitis	45	...	12	...	10	...	67	...	42·3	1·56
Bronchitis	83	5	65	2	33	...	171	7		
Asthma	9	1	1	...	1	...	11	1		
Pleurisy	7	...	2	.	1	...	10	...		
Pneumonia	7	1	2	1	2	...	11	2		
Stomatitis	1	...	...	...	1	...	2	...	...	...
Gastritis	1	1	..	...	...	...	1	1	...	...
Hæmatemesis and Melæna	5	...	1	...	...	...	6	...	...	...
Enteritis	2	1	...	...	1	...	3	1	...	...
Peritonitis	7	2	2	...	2	1	11	3	...	...
Dyspepsia	140	...	168	...	74	...	382	...	...	...
Constipation	10	...	3	..	4	...	17	...	...	...
Colic	36	..	16	...	12	...	64	...	...	...
Hæmorrhoids	13	...	10	...	3	...	26	...	...	...
Tapeworm	14	..	2	...	1	...	17	...	...	...
Jaundice	13	...	2	...	...	...	15	..	...	...
Hepatitis	91	7	20	1	24	2	135	10	21·2	1·56
Spleen enlargement	4	...	1	...	2	...	7	...	1·1	...
Dysentery	147	11	61	4	45	3	253	18	39·6	2·82
Diarrhœa	243	9	71	2	54	...	368	11	57·6	1·72
Ascites	1	..	1	...	...	...	2	...	...	...
Nephritis	6	...	1	...	1	...	8	...	...	...
Ischuria	6	..	3	...	1	...	10	..	...	...
Enuresis	2	...	...	..	...	...	2	...	...	...
Amenorrhœa	2	.	1	.	4	...	7	..	62·6	2·51†
Dysmenorrhœa	7	...	6	..	2	...	15	...		
Menorrhagia	44	...	16	..	13	...	73	...		
Hysteria	17	..	10	...	12	...	39	...		
Spurious pains	...	.	6	...	...	...	6	...		
Puerperal Convulsions	2	...	2	...	...	...	4	...		
Uterine Hæmorrhage	16	2	5	...	1	1	22	3		
Retained Placenta	...	1	1	...	...	...	1	1		
Metritis	3	...	...	1	...	1	3	2		
Phlegmasia dolens	2	...	...	...	...	...	2	...		
Puerperal Fever	1	1	1	1	..	...	2	2		
Abortion	92	1	33	1	31	1	156	3		
Ovaritis	2	...	...	..	...	...	2	...		
Ovarian Tumour	...	...	3	..	2	...	5	...		
Uterine Ulcer	6	...	2	.	...	...	8	...		
Polypus of Uterus	1	...	..	...	...	...	1	...		
Prolapsus of Uterus	7	..	7	..	6	...	20	...		
Vaginal Fistula	...	...	1	..	...	...	1	...		
Leucorrhœa	18	...	11	...	2	...	31	..		
Periostitis	2	...	...	...	1	...	3	...	...	...
Synovitis	9	...	...	..	2	...	11	...	...	...
Caries of Spine	1	...	..	.	...	...	1	...	...	...
Necrosis	4	1	...	...	...	...	4	1	...	..
Abscess and Ulcer	92	...	49	...	25	...	166	...	26·0	..
Scabies and Skin Diseases	17	...	7	...	3	...	27	...	...	...
Debility	679	4	267	1	57	...	1,003	5	213·2*	·47
Delirium Tremens	1	...	...	...	...	..	1	...	...	...
Injuries	35	...	25	...	10	...	70	...	11·0	...
Cause not ascertained	1	...	1	1	...	...	2	1	...	...
Ratio per 1,000 for all causes not specially calculated	...	...	...	...	...	...	...	...	122·7	2·19
	4,314	105	1,242	26	1,152	23	6,708	154	1050·8	24·12

* With Anæmia. † Including Puerperal Peritonitis and debility following labour.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS. 1871.

XIV.

DETAIL of the CAUSES of the ADMISSIONS and DEATHS of the CHILDREN of EUROPEAN REGIMENTS.

Children of the Army of Bengal—Strength .. 6,039 Admission-rate per 1,000 926·8 Death-rate per 1,000 86·11
" " Madras " . 2,534 " " .. 725·7 " .. 50·1
" " Bombay " . 2,127 " " ... 761·2 " . 69·11
" " India " .. 10,700 " " ... 846·3 " .. 74·21

CAUSES OF ADMISSIONS AND DEATHS	BENGAL.		MADRAS.		BOMBAY.		ARMY OF INDIA			
									RATIO PER 1000 OF STRENGTH	
	Admitted.	Died.	Admitted.	Died.	Admitted	Died	Admitted.	Died	Admitted	Died
Cholera ..	9	6	10	1			19	10	1·8	·94
Smallpox	3		...				3		·3	
Chickenpox .	67	..	9	..	1		77		...	
Measles .	368	29	143	2	52	3	563	34	52·6	3·18
Hooping Cough .	163	16	38	3	15		216	19	20·2	1·78
Mumps	6	...	3				9			
Dengue Fever Scarlet Fever	71	12	11	2	28	3	110	17	10·3	1·59
Diphtheria ...	2	2			...		2	2		
Hydrophobia	2	2			1	1	3	3		
Erysipelas ..	5	1	3			...	8	1		
Phagedæna ..	1	2	...				1	2		
Pyæmia		...	1	1			1	1		
Intermittent Fevers ..	703	9	109		361	2	1,173	11	109·6	3·36
Remittent and Continued Fevers	506	16	135	5	135	1	776	22	72·5	
Typhoid Fever ...	8	1	...	...	1	1	9	2	·8	
Rheumatism ..	8	..	3		2	...	13	..		...
Secondary Syphilis	8	6	2		5	...	15	6		
Scrofula	26		16	..	7	1	49	1		
Tabes Mesenterica .	25	18	21	9	6	3	52	30	10·8	2·80
Phthisis Pulmonalis .	2		1		1		4			
Hip joint Disease .	7		2	...	1		10			
Lumbar Abscess .	1	...	...	...	...		1	..		..
Anæmia	207	21	10	1	33	8	250	30	..	...
Anasarca .	1	1		...	2	...	3	1		...
Cancrum oris ...	2	4	...	..	1	1	3	5		
Scurvy .	1		2	1	1	1	4	2		
Sunstroke ...	7	4	1	1	1		9	5	·8	·47
Chorea	1	..	1	...	...		2			
Trismus	1	1			..		1	1		
Hysteria	1	..	2	..	..		3			...
Epilepsy	7	...	5		1	..	13			..
Paralysis ..	...	...	..		1		1	...		
Meningitis .	15	22	7	8	5	4	27	34	4·3	3·18
Hydrocephalus	12		6		1		19			
Convulsions	70	61	35	26	51	49	156	136	14·6	12·71
Dementia ..	1	..	...		..	..	1	...		
Ophthalmia .	1,201	..	293		297		1,791		167·4	
Otitis ...	9	...	6		2		17		..	
Pericarditis ..	...	..	1	1	..		1	1		
Heart Disease ..	3			...	..		3	..		...
Palpitation ..	7		...	..			7			
Epistaxis ...	1	...	..		..		1			..
Tonsillitis	34	2	17		3	...	54	2		
Laryngitis and Croup ..	35	11	2	1	4	2	41	14		
Bronchitis	184	23	172	7	76	8	432	38	51·2	5·79
Asthma ...	1			...	...	...	1	..		
Pneumonia .	11	5	1	1	4	...	16	6		
Pleurisy ...		..	1		1	..	2	...		
Ozæna	1	...	..		...	..	1			
Stomatitis ..	13	..	1		1		15			...
Aphtha ...	5	1	..		2	...	7	1		
Gastritis ...	1	...	..		1	1	2	1	...	...
Enteritis ...	3	1	1	1	2	2	6	4	...	
Peritonitis	...	...			1	..	1			
Dyspepsia ...	25	...	11		11		47			..
Constipation .	6	...			...		6			..
Colic ...	8	...	3		1	...	12	..	...	..
Prolapsus ani ...	4	...	5				9	..	...	...
Hernia .	2	1	1		...	..	3	1	...	
Tapeworm ...	18	1	5		8	..	31	1	...	
Ascarides ...	13	1	14		9		36	1	...	
Jaundice .	12	3	2		1		15	3	..	
Hepatitis ...	17	1	7	1	1		25	2	2·3	...
Spleen enlargement .	25	2	...		2	..	27	2	2·5	...
Dysentery ..	110	13	106	6	39	8	255	27	23·8	2·52
Diarrhœa ..	749	108	209	16	209	25	1,167	149	109·1	13·93
Nephritis	1	..	1	1	..	..	2	1	..	..
Enuresis ...	1		..	..		...	1	..		...
Phimosis ..	1		...				1	..		..
Gonorrhœa .	2						2	..		..
Hydrocele			1				1		...	...
Orchitis .	1	..					1	...		...
Leucorrhœa	1		...		1		2			
Amenorrhœa	1				2	...	3			..
Menorrhagia .	2	...			1		3	..		...
Curvature of Spine ...	1	..	..		...	..	1	..		
Spina Bifida ...	1	1	...	..		...	1	1		..
Dentition .	229	39	94	15	91	10	414	64	38·7	5·98
Ostitis .	1	...	...		1	1	2	1		...
Synovitis ...	2		1		5	...	8		...	
Caries ...	1	...	1			..	2		...	...
Atrophy of Muscle			1			..	1		..	..
Scabies and Skin Diseases ..	36		25		11	...	72	...		...
Abscess and Ulcer ..	82	1	11	..	26		119	1	11·1	
Tumour	...	..	2				2	...		...
Atrophy and Debility ..	331	37	197	13	55	8	583	58	77·9	8·22*
Injuries .	92	5	46		31	1	169	6	15·8	...
Cause not specified ...	1	...	..	1			1	1		...
Ratio per 1,000 for all causes not specially calculated .		...				...	..	...	15·0	1·77
	5,597	520	1,839	127	1,619	147	9,055	794	846·3	74·21

---

* With Anæmia.

2. NATIVE TROOPS, 1871.

The regimental strengths upon which the actual death-rate for the year is calculated, are taken as at 1st January. The difference between the strength of January and December is 248 only, the strength on the 1st January having been 44,477, and on the 31st December 44,725. The death-rates may, therefore, be calculated with approximate accuracy on the strength with which regiments commenced the year. The total deaths, absent and present, amount to 792, and this number, with a strength of 44,477, represents a loss of 17·81 per 1,000. The deaths of men present with their regiments amounted to 592, giving a ratio of 15·04 in relation to a strength of 39,379, the average present during the year.

NATIVE TROOPS, 1871.

I.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the BENGAL PRESIDENCY during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

(This Statement is for the Regular Native Army only, and for men present from month to month with their Regiments,—(See introductory note)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	42,655	1,894	44·4	111	2·60	...	...	11	6	...	6	7	...	2	52	2	4	1	...	6	..	5	9
February ...	42,680	1,619	37·9	56	1·31	...	.	3	7	1	4	7	...	1	25	2	2	...	1	...	1	2	...
March ...	42,380	1,486	35·1	66	1·53	...	...	9	6	1	4	3	...	3	17	1	4	.	..	2	1	11	3
April ...	37,283	1,386	37·1	37	·99	3	...	...	2	1	1	3	2	3	10	...	6	...	...	1	1	3	1
May ..	36,171	1,309	36·2	35	·97	1	...	1	4	..	3	2	.	...	8	1	3	.	...	1	1	6	4
June ...	36,420	1,234	33·9	24	·66	1	...	2	6	.	2	2	1	...	4	...	1	1	.	.	1	2	1
July ..	36,881	1,332	36·2	23	·63	2	...	1	...	...	2	3	1	...	3	1	1	...		4	1	3	1
August ..	37,153	1,608	43·3	27	·73	2	..	2	5	1	3	2	1	1	3	...	2	...	...	.	...	3	2
September ...	37,240	1,825	49·0	32	·86	...	...	2	7	...	2	2	1	2	3	1	3	...	1	1	1	4	2
October ...	38,964	1,935	49·7	44	1·13	1	...	7	4	...	7	4	1	4	6	...	6		1		...	2	1
November ...	42,080	2,000	47·5	62	1·47	6	...	3	6	1	5	5	.	1	16	...	7	..	..	1	1	9	1
December ...	42,679	2,073	48·6	76	1·78	17	...	5	5	..	4	11	1	...	18	.	2	...	..	3	2	1	7
						33	...	46	58	5	43	51	8	17	165	8	41	2	3	19	10	51	32
						Died per 1,000 of the Average Strength.																	
For the year ...	39,379	1,642	41·7	592	15·04	·84	...	2·64		·13	1·09	1·30	·20	·43	4·19	·20	1·04	·05	·08	·48	·26	1·30	·81

Absent Deaths, 200. Ratio of 792 Deaths, 17·81 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	3	2	2	4	2	1	5	12	20	51	1·3	64·71
Smallpox ...	5	4	4	6	2	...	...	...	...	1	2	3	27	·7	...
Fever, Intermittent ...	1,627	1,015	1,010	1,319	1,941	1,415	1,715	2,802	2,798	3,738	2,627	2,173	24,180	614·0	·19
" Remittent and Continued ...	46	36	33	64	50	30	41	43	30	44	38	37	491*	12·5	11·81
Apoplexy ...	1	2	...	1	1	...	1	1	..	1	..	..	8	·2	62·50
Dysentery ...	251	152	182	210	226	169	161	256	257	346	353	549	3,112	79·0	1·90
Diarrhœa ...	125	84	154	141	162	127	130	158	124	141	165	332	1,843	46·8	
Hepatitis ...	4	5	4	5	11	7	5	5	7	8	5	2	68	1·7	11·77
Spleen Disease ...	77	26	34	24	28	23	33	50	47	47	41	26	456	11·6	3·73
Respiratory Diseases ...	438	232	195	121	125	66	71	99	102	176	186	340	2,151	54·6	7·67
Phthisis Pulmonalis ...	8	11	12	11	13	8	8	12	9	9	11	7	119	3·0	34·45
Dropsy ...	5	1	1	2	1	...	1	...	1	2	...	2	16	·4	12·50
Scurvy ...	18	9	14	12	28	12	6	7	3	14	6	6	135	3·4	2·22
Rheumatism ...	276	210	199	152	163	151	115	198	154	205	208	228	2,259	57·4	·49
Venereal Diseases ...	118	92	96	87	97	85	89	88	66	114	125	129	1,186	30·1	
Eye Diseases ...	48	50	61	95	139	115	120	125	84	83	50	57	1,027	26·1	
Abscess and Ulcer ...	422	252	230	277	331	312	419	472	355	397	314	399	4,180	106·2	
Wounds and Accidents ..	471	410	432	419	518	353	384	491	393	536	424	477	5,307	134·8	
All other Causes ...	429	315	324	305	370	261	304	398	348	388	293	335	4,070	103·4	
	4,369	2,906	2,985	3,244	4,217	3,136	3,607	5,207	4,779	6,254	4,860	5,122	50,686		
	Admitted per 1,000 of the Average Strength in each Month.														
	102·4	68·1	70·4	87·0	116·6	86·1	97·9	140·2	128·3	160·5	115·5	120·0	1287·2		

---

* In the Native Army, in 1871, one case of Fever was returned as Typhus, and one as Typhoid Fever.

NATIVE TROOPS, 1871.

II.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in BENGAL PROPER, and in ASSAM, during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	7,773	369	47·4	20	...	...	..	2	...	...	2	1	...	1	2	...	...	...	..	2	...	2	8*
February ...	7,783	352	45·2	10	...	...	...	1	1	...	...	...	...	...	3	2	1	...	1	...	...	1	...
March ...	7,830	367	46·9	18	...	...	...	2	1	...	3	...	...	1	2	1	1	...	...	2	...	4	1
April ...	7,146	352	49·3	8	...	2	...	...	...	...	...	2	...	1	...	...	2	...	...	...	...	...	1
May ...	7,084	381	53·8	10	...	...	...	...	2	...	2	1	...	...	3	...	1	...	...	...	...	1	...
June ...	7,047	432	61·3	5	...	1	...	...	3	...	...	...	...	...	...	...	...	...	...	...	..	1	...
July ...	7,053	429	60·8	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
August ...	7,150	462	64·6	10	...	1	...	1	2	...	2	2	...	...	...	...	1	...	...	..	..	...	1
September ...	7,110	467	65·7	12	...	...	...	...	3	...	1	2	...	1	1	...	...	...	...	1	..	2	1
October ...	7,413	464	62·6	10	...	1	...	1	1	...	1	2	...	1	...	...	2	...	1	...	..	..	...
November ...	6,905	495	71·7	17	...	2	...	1	2	...	2	3	...	1	2	...	2	...	...	..	...	2	...
December ...	6,144	377	61·4	10	...	1	...	...	1	...	2	2	...	...	2	...	1	...	...	1	...	...	...
						9	...	8	16	...	15	15	...	6	15	3	11	...	2	6	...	14	12
						Died per 1,000 of the Average Strength.																	
For the year ...	7,203	412	57·2	132	18·33	1·25	...	3·33		...	2·09	2·00	...	·83	2·00	·41	1·53	.	·28	·83	...	1·94	1·66

Absent Deaths, 74.† Ratio of 206 Deaths, 25·03 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	...	2	...	1	3	1	1	2	2	2	14	2·0	64·29
Smallpox ...		...	.	...		...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ..	228	216	224	245	535	520	550	729	571	666	491	361	5,336	740·8	·15
„ Remittent and Continued ...	13	10	8	15	19	17	24	14	12	21	15	7	175	24·3	9·14
Apoplexy ...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...
Dysentery ...	146	86	96	97	111	72	69	80	80	139	108	102	1,186	164·7	1·52
Diarrhœa ...	54	31	68	56	90	68	65	79	65	84	58	71	790	109·7	
Hepatitis ...	2	2	..	1	3	4	3	1	2	2	1	...	21	2·9	...
Spleen Disease ...	11	6	9	10	7	12	9	23	21	20	9	4	141	19·6	4·26
Respiratory Diseases ...	70	50	55	39	58	29	39	30	47	55	40	56	568	78·9	2·64
Phthisis Pulmonalis ..	2	7	2	1	2	2	1	5	4	3	1	4	34	4·7	32·35
Dropsy ...	1	1	...	...	...	...	1	...	1	1	...	...	5	·7	..
Scurvy ...	6	6	11	9	16	8	4	...	...	8	5	3	76	10·5	2·63
Rheumatism ...	56	43	44	40	47	37	25	39	52	48	40	27	498	69·1	·56
Venereal Diseases ...	21	16	27	27	22	22	21	20	19	26	19	16	256	35·5	
Eye Diseases ...	6	7	15	17	12	18	18	15	22	19	3	8	160	22·2	
Abscess and Ulcer ...	79	67	52	66	84	53	63	48	54	45	29	33	673	93·4	
Wounds and Accidents...	112	107	120	137	167	105	82	104	87	103	79	69	1,272	176·6	
All other Causes ...	118	94	96	115	157	100	101	110	116	120	80	56	1,263	175·4	
	925	752	827	877	1,330	1,068	1,078	1,298	1,154	1,362	978	819	12,468		
	Admitted per 1,000 of the Average Strength in each Month.														
	119·0	96·6	105·6	122·7	187·7	151·6	152·8	181·5	162·3	183·8	141·6	133·3	1731·0		

---

* Killed in action.

† Including the deaths of men of the Regiments of Bengal Proper which took place after joining the Loshaie Force. The deaths of the Loshaie Force are not included in this Provincial Statement.

NATIVE TROOPS, 1871.

III.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the DINAPORE, BENARES, OUDE and CAWNPORE DISTRICTS during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																		
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	7,097	261	36·8	8	...	...	...	...	..	...	3	...	...	1	2	...	...	1	..	1	...	...	...
February ...	7,091	243	34·3	4	...	...	...	...	...	1	2	...	...	..	1	...	..	...	..	.	...	...	...
March ...	7,171	245	34·2	9	...	.	...	...	1	1	1	1	...	1	1	...	1	.	...	...	..	1	1
April ...	6,354	218	34·3	8	...	1	...	...	...	...	1	1	...	1	1	..	2	...	...	...	...	1	...
May ...	6,072	193	31·8	3	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	..	...	1	...
June ...	6,261	187	29·9	4	...	...	...	...	...	...	1	...	1	...	1	...	...	...	..	..	...	1	...
July ...	6,288	193	30·7	1	...	...	...	...	...	...	...	...	...	...	1	...	...	.	.	..	...	..	...
August ...	6,274	239	38·1	4	...	...	...	1	1	...	...	...	...	...	...	...	1	...	.	..	.	1	...
September ...	6,297	293	46·5	2	...	..	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
October ...	6,726	335	49·8	8	...	...	...	1	...	...	1	...	..	1	2	...	3	...	...	..	...	...	...
November ...	6,514	288	44·2	7	...	3	...	...	1	...	...	...	..	...	1	...	1	...	...	..	..	1	..
December ...	6,209	253	40·8	3	...	...	...	..	...	...	1	...	...	...	1	.	1	...	...	.	...	...	...
						4	...	3	3	2	11	2	1	5	12	...	9	1	...	1	.	6	1
						Died per 1,000 of the Average Strength.																	
For the year ...	6,530	246	37·7	61	9·34	·61	..	·92		·31	1·68	·31	·15	·77	1·84	...	1·38	·15	.	·15	...	·92	·15

Absent Deaths, 38. Ratio of 99 Deaths, 13·75 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	1	..	1	...	...	..	3	4	...	9	1·4	44·44
Smallpox ...	1	...	...	...	...	...	...	...	...	.	.		1	·2	...
Fever, Intermittent ...	221	146	131	153	189	146	181	381	447	788	385	233	3,401	520·8	·09
„ Remittent and Continued ...	6	8	7	14	13	3	2	4	3	5	3	4	72	11·0	4·17
Apoplexy ...	...	2	...	...	...	...	1	...	...	...	...	..	3	·5	66·67
Dysentery ...	49	26	34	26	27	21	13	27	27	24	33	30	337	51·6	2·47
Diarrhœa ...	19	15	26	25	18	14	13	10	7	9	12	21	189	28·9	
Hepatitis ...		1	1	...	1	...	1	...	2	1	1	1	9	1·4	11·11
Spleen Disease ...	7	5	4	4	4	1	5	7	4	9	7	6	63	9·6	7·94
Respiratory Diseases ...	39	35	17	13	11	8	8	15	15	41	37	41	280	42·9	4·29
Phthisis Pulmonalis ...	...	4	2	2	1	3	4	4	1	1	6	1	29	4·4	31·03
Dropsy ...	...	...	...	...	1	...	...	...	...	1	..	1	3	·5	33·33
Scurvy ...	6	1	1	2	10	1	...	4	1	..	..	..	26	4·0	...
Rheumatism ...	46	32	39	30	27	25	32	38	24	47	33	38	411	62·9	·23
Venereal Diseases ...	23	11	22	14	24	19	20	21	15	20	22	10	221	33·8	
Eye Diseases ...	10	8	10	26	37	31	24	25	8	13	13	7	212	32·5	
Abscess and Ulcer ...	69	41	41	32	54	35	72	102	67	72	47	62	694	106·3	
Wounds and Accidents ..	91	77	77	59	83	48	77	61	62	68	54	37	787	120·5	
All other Causes ...	84	58	60	45	50	41	53	72	65	78	38	49	702	107·5	
	665	470	481	446	550	397	506	771	738	1,180	695	550	7,449		
	Admitted per 1,000 of the Average Strength in each Month.														
	93·7	66·3	67·1	70·2	90·6	63·4	80·5	122·9	117·2	175·4	106·7	88·6	1140·7		

NATIVE TROOPS, 1871.

IV.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the MEERUT DISTRICT, and in ROHILCUND during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Deaths out of Hospital.
January	6,142	197	30·6	18	..		...	...	4	...	...	2	...	...	8	1	3	...	...	...	...	...	...
February	6,400	160	25·0	5	...	...	...	..	2	...	...	1	...	.	1	..		.	..	..	1	...	...
March	6,390	155	24·3	6	...	...	...	2	1	...	...	...	..	1	2	...	.	..	...	...	...	.	...
April	5,787	136	23·5	4	..		...	...	.	1	...	.	1	...	1	...	1	...	...	...	...	...	..
May	5,583	132	23·6	5	...	1		.	...	...	...		.	..	1	...	1		.	...	1	...	1
June	5,496	134	24·4	4	..		..	..	1	...	1	...	.	.	1	...	1	..	...	..	..	...	...
July	5,577	156	28·0	6	..	...	.	..	..	.	2	1	1	.	.	1	1	.	...	...	...	..	...
August	5,617	182	32·4	4	...	1	.	...	...	..	...	...	1	1	.	...	...	..	..	...	.	1	...
September	5,590	210	37·6	11	.	...	..	.	4	...	1	...	1		1	...	2	.	1	..	...	...	1
October	5,177	194	37·5	9	.	.	..	1	3	..	4	..				...	1	...	...	..	..	...	...
November	4,701	154	32·8	2	..	.	...	...		.	.	..	..	...		...	1	...	...	...	1	...	..
December	2,970	94	31·7	7	..	1	...		2	..	...	...	...	.	2	...	...		...	...	1	...	1
						3	..	3	17	1	8	4	4	2	17	2	11	.	1	..	4	1	3
						Died per 1,000 of the Average Strength.																	
For the year	5,478	159	29·0	81	14·78	·55		3·65		·18	1·46	·73	·73	·37	3·10	·37	2·00	..	·18	..	·73	·18	·55

Absent Deaths, 32. Ratio of 113 Deaths, 16·13 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	..	..	..	2	..		1	...	..	...	1	4	·7	75·00
Smallpox	2	1	1	2			..	.		..		1	7	1·3	...
Fever, Intermittent	137	77	120	94	165	157	200	382	420	361	168	67	2,348	428·6	·13
„ Remittent and Continued	11	9	11	11	11	3	8	11	7	8	7	10	110	20·1	15·45
Apoplexy		...		1			...	..	..	.	...	..	1	·2	...
Dysentery	20	3	9	23	16	10	15	26	14	32	24	10	202	36·9	3·02
Diarrhœa	5	12	13	10	7	9	7	9	5	6	9	12	104	19·0	
Hepatitis	1	2	1	1	1	1		1	1	1	.	...	10	1·8	40·00
Spleen Disease	2		1	1	3	3	5	3	3	4		...	26	4·6	8·00
Respiratory Diseases	41	10	18	14	20	10	4	12	7	19	15	12	182	33·2	9·34
Phthisis Pulmonalis	2	...	4	1	8	1	1		2	2	1	...	25	4·6	44·00
Dropsy	1		...	..	..		..		..	..	...	1	2	·4	
Scurvy			..	...	...	.	...	2	.	2		..	4	·7	25·00
Rheumatism	26	29	16	15	18	22	11	14	13	19	19	7	209	38·2	·40
Venereal Diseases	20	20	16	16	14	9	11	9	3	11	8	4	141	25·7	
Eye Diseases	10	7	11	17	25	16	13	11	10	6	8	3	137	25·0	
Abscess and Ulcer	33	19	25	20	33	42	34	51	22	37	34	23	373	68·1	
Wounds and Accidents	57	40	47	56	46	57	40	39	45	43	38	21	519	94·7	
All other Causes	41	33	30	32	32	20	20	43	27	30	22	34	364	66·4	
	409	262	313	320	401	360	369	611	570	581	353	206	4,767		
	Admitted per 1,000 of the Average Strength in each Month														
	63·5	40·9	49·0	55·3	71·8	65·5	66·2	109·3	103·6	112·2	75·1	69·3	870·2		

NATIVE TROOPS, 1871.

V.

TABLE showing the SICKNESSS and MORTALITY among the NATIVE TROOPS serving in the AGRA DISTRICT, and in CENTRAL INDIA during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

(Several of the Stations of this area usually occupied by Regiments of the Bengal Army were, in 1871, occupied by Madras Troops. The Statistics of the Madras Troops occupying Stations of the Bengal Presidency are given in Table XVII).

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Deaths out of Hospital.
January ...	4,510	236	52·3	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
February ...	4,508	204	45·3	4	...	...	...	1	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...
March ...	4,191	203	48·4	5	...	...	...	2	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...
April ...	3,664	259	70·7	4	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	2	...
May ...	3,534	235	66·3	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
June ...	3,585	133	37·1	3	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...
July ...	3,686	157	42·6	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
August ...	3,728	212	56·9	3	...	...	...	...	1	...	1	...	...	...	1	...	...	...		...	...	...	
September ...	3,761	347	92·3	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October ...	3,872	360	93·0	5	...	...	...	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
November ...	3,962	293	74·0	7	...	...	...	1	1	...	1	...	...	...	1	...	1	...	...	...	...	2	...
December ...	3,364	253	75·2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
						...	...	11	4	...	2	6	...	...	5	...	2	1		2	...	5	1
						Died per 1,000 of the Average Strength.																	
For the year ...	3,864	241	62·4	39	10·09	...	...	3·88		...	·52	1·55	...	...	1·29		·52	26		·52	...	1·29	·26

Absent Deaths, 18. Ratio of 57 Deaths, 11·82 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	None.	...	...
Smallpox ...	...	...	...	...	2	...	...	...	...	...	1	...	3	·8	...
Fever, Intermittent ...	313	200	256	527	570	218	314	400	642	775	485	300	5,000	1317·3	·22
„ Remittent and Continued ...	...	1	2	2	...	1	...	1	2	...	1	2	12	3·1	33·33
Apoplexy ...	1	...	...	...	...	...	...	...	...	...	...	...	1	·3	...
Dysentery ...	7	3	5	16	10	8	11	21	14	13	15	15	138	35·7	3·51
Diarrhœa ...	8	4	12	13	6	6	12	8	5	5	5	6	90	23·3	
Hepatitis ...	...	...	...	1	1	...	...	...	1	1	...	...	4	1·0	...
Spleen Disease ...	6	3	...	1	...	...	...	6	5	5	5	7	38	9·8	...
Respiratory Diseases ...	14	19	16	3	5	5	3	5	6	15	17	61	169	43·7	2·96
Phthisis Pulmonalis ...	2	...	1	1	1	...	...	1	...	1	1	...	8	2·1	25·00
Dropsy ...	1	...	...	1	...	...	...	...	...	...	...	...	2	·5	50·00
Scurvy ...	...	1	...	1	...	...	1	...	...	1	...	...	4	1·0	...
Rheumatism ...	37	26	35	18	18	13	16	24	13	17	34	28	279	72·2	·33
Venereal Diseases ...	21	19	15	10	20	8	9	15	8	13	14	21	173	44·8	
Eye Diseases ...	6	10	4	6	8	6	10	20	8	6	3	7	94	24·3	
Abscess and Ulcer ...	60	42	30	32	27	40	37	66	59	59	30	52	534	138·2	
Wounds and Accidents ...	73	65	67	42	33	17	46	82	58	85	46	57	671	173·7	
All other Causes ...	37	24	27	23	30	19	21	31	35	31	36	29	342	88·5	
	586	417	470	697	731	341	480	770	856	1,027	692	585	7,652		
	Admitted per 1,000 of the Average Strength in each Month.														
	129·9	92·5	112·1	190·2	206·9	95·1	130·3	206·6	227·6	265·2	174·7	173·9	1980·3		

NATIVE TROOPS, 1871.

VI.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the PUNJAB during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	16,833	831	49·4	64	...	...	...	9	2	...	1	4	...	...	39	1	1	...	...	3	...	3	1
February ...	16,898	660	39·1	33	...	...	..	1	3	...	2	4	...	1	20	..	1	...	...	...	...	1	...
March ..	16,807	516	30·7	27	...	..	...	3	2	...	...	2	...	...	11	..	2	...	..	..	1	5	1
April ...	14,332	420	29·3	13	...	...	...	...	2	...	...	...	1	1	7	..	...	...	...	1	1	...	..
May ...	13,898	368	26·5	14	.	..	.	...	2	...	...	1	...	...	3	1	1	...	...	...	...	4	2
June ...	14,031	348	24·8	8	...	...	...	1	2	...	...	1	...	...	2	...	...	...	...	...	1	...	1
July ...	14,228	397	27·9	12	...	1	...	1	...	...	...	1	...	...	2	...	...	...	...	3	1	2	1
August ...	14,381	513	35·7	6	..	...	...	...	1	1	...	..	...	...	2	...	...	...	...	...	...	1	1
September ...	14,488	508	35·1	5	...	...	...	...	...	..	...	...	..	...	1	1	1	...	...	...	...	2	...
October ..	14,793	549	37·1	12	.	...	.	...	...	...	1	1	1	2	4	...	...	...	.	..	...	2	1
November ...	15,915	649	40·7	22	..	.	...	1	1	...	1	2	..	...	12	..	2	...	..	1	...	2	...
December ...	16,170	621	38·4	22	...	.	...	4	2	...	1	4	...	...	8	...	...	.	...	2	...	...	1
						1	...	20	17	1	6	20	2	4	111	3	8	...	..	10	4	22	9
						Died per 1,000 of the Average Strength.																	
For the year ..	15,234	532	31·9	238	15·62	·07	...	2·43		·07	·39	1·31	·13	·26	7·29	·20	·52	..	...	·66	·26	1·44	·59

Absent Deaths, 81. Ratio of 319 Deaths, 18·53 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera	...	...	...	...	...	...	1	...	...	...	..	...	1	·1	..
Smallpox	2	3	3	4	..	.	...	..	.	1	1	...	14	·9	...
Fever, Intermittent .	728	376	279	300	482	374	470	820	718	1,098	886	511	7,042	462·3	·28
„ Remittent and Continued ...	16	8	5	9	16	6	7	13	6	9	10	9	114	7·5	14·91
Apoplexy ..	...	..	.	..	1	..	...	1	.	1	...	...	3	·2	33·33
Dysentery	38	34	38	48	62	58	53	102	122	135	112	85	887	58·2	1·09
Diarrhœa	39	19	35	37	41	30	33	52	12	33	25	35	421	27·7	
Hepatitis	1	...	2	2	5	2	1	3	1	2	1	...	20	1·3	10·00
Spleen Disease	51	12	20	8	14	7	14	11	14	9	19	8	187	12·3	2·14
Respiratory Diseases ...	274	118	89	52	31	14	17	37	27	44	62	101	866	56·8	12·82
Phthisis Pulmonalis	2		3	3	1	2	2	2	2	2	2	2	23	1·5	34·78
Dropsy .	2	.	1	1	..	...	...	...	...	...	...	...	4	·3	...
Scurvy ...	6	1	2	..	2	3	1	1	2	3	1	2	24	1·6	...
Rheumatism .	111	80	65	49	53	54	31	83	52	71	63	71	783	51·4	·60
Venereal Diseases .	33	26	16	20	17	27	28	23	21	38	48	40	337	22·1	
Eye Diseases ...	16	18	21	29	57	44	55	54	36	37	22	21	410	26·9	
Abscess and Ulcer ..	181	83	82	127	133	142	213	205	153	176	151	164	1,810	118·8	
Wounds and Accidents	135	121	131	125	180	126	139	205	151	218	164	141	1,845	121·1	
All other Causes ..	149	106	102	90	101	81	109	142	105	121	96	86	1,288	84·5	
	1,784	1,005	801	904	1,205	970	1,174	1,754	1,452	1,998	1,063	1,276	16,079		
	Admitted per 1,000 of the Average Strength in each Month.														
	106·0	59·5	53·2	63·1	86·7	69·1	82·5	121·9	100·2	135·1	104·3	78·9	1055·5		

NATIVE TROOPS, 1871.

VII.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS composing the CENTRAL INDIA IRREGULAR FORCE during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	4,249	158	36·7	7	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	1	...	3	...
February ...	4,226	144	34·1	6	...	...	...	...	1	...	...	1	..	...	1	...	...	...	...	...	...	2	1
March ...	4,089	141	34·5	11	...	...	...	3	1	...	2	1	..	...	2	..	...	.	...	.	...	2	...
April ...	3,778	121	32·0	8	...	...	...	2	2	...	...	...	..	...	2	...	...	...	...	...	...	2	...
May ...	3,740	128	34·2	1	...	...	..	...	..	...	1	...	...	...	...	...	...	..	. .	...	...	...	...
June ..	3,825	115	30·1	2	...	...	...	...	...	...	..	...	...	...	1	...	...	...	...	...	...	1	...
July ...	3,913	127	32·4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..	.	...	...	1	...
August ...	3,975	138	34·7	3	...	...	...	...	...	..	...	1	...	...	2	..	...	...	...	...	...	...	...
September ...	4,082	114	28·0	3	...	...	...	...	...	...	...	1	..	...	1	..	...	...	...	...	..	1	...
October ..	4,162	157	37 7	4	...	...	...	1	1	...	1	1	...	...	...	..	...	. .	...	..	...	...	...
November ...	4,150	147	35·4	3	...	...	...	2	1	...	...	...	..	...	...	..	...	...	.	..	...	...	...
December ...	4,117	122	29·6	6	...	...	...	...	...	...	...	1	...	...	3	...	..	...	...	...	...	1	1
						...	...	10	7	...	4	6	...	...	12	...	...	..	...	1	...	13	2
						Died per 1,000 of the Average Strength.																	
For the year ...	4,026	134	33·3	55	13·66	...	...	4·22		...	·99	1·49	...	...	2·98	...	...	..	.	·25	.	3·23	·50

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	..	...	...	1	...	1	...	...	...	1	...	3	·7	...
Smallpox ...	...	...	1	...	...	..	...	...	...	...	.	...	1	·2	...
Fever, Intermittent .	126	119	146	110	92	87	100	102	151	295	171	124	1,722	427·7	·58
„ Remittent and Continued .	1	6	5	4	2	3	4	4	3	3	8	2	45	11·2	15·55
Apoplexy ...	...	...	..	...	...	...	...	..	...	.	...	...	...	...	...
Dysentery ..	9	7	10	10	5	4	20	17	8	11	6	16	123	30·8	4·24
Diarrhœa .	1	4	7	5	11	7	10	19	17	12	11	9	113	28·2	
Hepatitis ...	...	...	...	...	1	...	..	2	..	1	1	2	7	1·7	..
Spleen Disease ..	...	1	1	...	3	2	1	3	...	5	2	1	19	4·7	...
Respiratory Diseases .	17	21	23	14	8	3	6	5	6	16	13	13	145	36·0	8·28
Phthisis Pulmonalis ...	...	...	...	...	...	...	..	...	...	..	...	..	..	...	..
Dropsy ...	...	..	..	..	...	.	...	...	..	...	...	...	..	...	..
Scurvy ...	...	..	...	...	...	...	.	...	1	2	...	...	3	·7	...
Rheumatism ...	18	23	20	6	18	7	8	8	7	16	10	15	156	38·7	·88
Venereal Diseases	11	14	3	9	14	9	8	11	10	12	3	4	108	26·8	
Eye Diseases ...	16	8	10	11	24	15	21	40	19	10	17	15	215	53·4	
Abscess and Ulcer ...	38	32	28	21	31	20	16	24	23	28	15	32	308	76·5	
Wounds and Accidents ...	84	33	29	24	22	21	21	38	25	41	30	26	394	97·9	
All other Causes ...	37	48	37	26	54	14	35	48	35	33	21	31	419	104·1	
	358	280	320	240	286	222	260	411	305	494	309	290	3,781		
	Admitted per 1,000 of the Average Strength in each Month.														
	84·2	67·7	78·3	63·5	76·5	58·0	66·4	103·4	74·7	118·7	74·3	70·4	939·1		

The Mairwarra Battalion, which was added to the Central India Force during the year, is not included in this Table, the weekly returns having been received for the last three months only.

The Total Strength of the Corps of the Central India Force, including the Mairwarra Battalion, was approximately 5,600, and out of this strength the deaths were 82, which gives a ratio of 14·64 per 1,000.

The Gain and Loss Statement for the year is as under :—

Strength borne on the Rolls at the beginning of the year	...	5,603
Additions received during the year	...	334
Total	...	5,937
Deaths at Head-quarters and in Detachments 74; on Furlough 8; Invalided for Discharge 48; otherwise discharged 212	..	342
Remaining on the Rolls of the Regiments on 31st December	.	5,595

NATIVE TROOPS, 1871.

VIII.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS composing the PUNJAB IRREGULAR FORCE during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.*	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																		Died out of Hospital.
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January	11,340	752	66·3	43	...	...	...	5	5	...	2	2	..	...	25	...	2	...	...	...	1	1	..	
February	11,312	583	51·5	20	...	...	...	...	2	...	...	...	...	...	13	1	...	1	.	2		1	...	
March	10,968	440	40·1	20	..	...	...	1	3	..	3	...	1	1	8	1	1	...	...	...	...	1	...	
April	10,283	335	32·6	16	...	...	1	2	3	1	2	...	...	...	6	...	...	...	...	1	...	...	...	
May	9,209	353	38·0	7	...	...	...	.	3	..	2	...	..	...	..	...	..	...	..	1	..	1	...	
June	9,350	382	40·9	11	...	...	...	2	5	1	1	...	...	...	..	...	1	...	.	..	.	1	..	
July	9,343	377	40·4	8	...	...	...	...	2	2	1	1	...	..	1	.	...	...	...	.	.	1	...	
August	9,268	439	47·4	8	...	1	...	.	..	..	...	.	...	...	1	1	...	...	...	...	.	2	3	
September	9,424	461	48·9	3	...	.	...	..	1	..	1	.	...		..	..	...	...	...	...	...	1	...	
October	9,401	534	56·8	4	...	...	...	1	..	...	1	...	...	...	..		1	...	1	..		...	...	
November	10,646	668	62·8	16	...	...	1	1	5	...	1	...	.	...	5	...	...	..	..	..	...	3	...	
December	11,100	663	59·3	25	...	...	..	2	6	...	1	...	...	...	13	...	1	...	...	1	...	1	...	
						1	2	14	35	4	15	3	1	1	72	3	6	1	1	5	1	13	3	
						Died per 1,000 of the Average Strength.																		
For the year ...	10,153	499	49·1	181	17·83	·10	·20	4·82		·39	1·47	·30	·10	·10	7·09	·30	·59	·10	·10	·49	·10	1·28	·30	

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	..	1	..	...	1	1	...	...	..	3	·3	33·33
Smallpox ...	...	1	1	2	1	1	1	.	...	...	1	1	9	·9	22·22
Fever, Intermittent ...	803	406	391	332	578	453	466	695	702	1,472	1,286	742	8,326	820·0	·17
" Remittent and Continued ...	29	12	11	17	24	11	6	9	8	32	18	23	200	19·7	17·50
Apoplexy ...	...	...	...	1	...	1	1	...	2	.	...	...	5	·5	80·00
Dysentery ...	70	28	43	43	19	73	57	106	107	108	74	132	888	87·4	1·24
Diarrhœa ...	40	16	31	27	43	57	52	49	55	45	62	79	559	55·0	
Hepatitis ...	2	...	1	1	2	..	1	...	3	...	1	1	12	1·2	8·33
Spleen Disease ...	14	10	5	18	18	12	6	9	10	13	24	16	155	15·3	·65
Respiratory Diseases ...	272	101	68	40	18	22	11	25	13	36	46	80	735	72·4	9·80
Phthisis Pulmonalis ...	2	...	2	...	1	2	1	1	2	2	...	5	18	1·8	33·33
Dropsy ...	1	1	..	...	..	..	...	...	...	...	...	...	2	·2	50·00
Scurvy ...	...	2	1	1	..	1	1	1	2	3	4	1	17	1·7	5·88
Rheumatism... ...	89	42	48	33	36	37	30	40	39	37	62	64	563	55·5	·39
Venereal Diseases ...	29	24	25	26	30	21	18	27	19	21	16	21	277	27·3	
Eye Diseases ...	14	10	15	24	34	25	20	27	27	33	18	14	261	25·7	
Abscess and Ulcer ...	200	80	78	71	138	143	209	278	136	132	131	156	1,752	172·5	
Wounds and Accidents ...	144	80	109	117	113	92	111	167	111	163	149	164	1,550	152·7	
All other Causes ...	121	68	92	101	112	104	88	105	90	102	109	108	1,200	118·2	
	1,830	881	924	851	1,228	1,055	1,085	1,540	1,327	2,197	2,001	1,607	16,532		
	Admitted per 1,000 of the Average Strength in each Month.														
	161·3	78·1	84·2	83·1	132·1	112·8	116·1	166·2	140·8	233·7	187·9	143·6	1628·3		

Calculated on a Strength of 12,300, which approximately represents the Total Strength, absent as well as present, the Death-rate of the year is 20·90 per 1,000, the equivalent of 257 deaths

The Gain and Loss Statement for the Frontier Force for the year is as under:—

Strength borne on the Regimental Rolls on 1st January 1871 ...	12,239
Additions received during the year ...	1,603
TOTAL ...	13,842
Deaths at Head-quarters and in Detachments 181; died while on Furlough and Sick Leave 76; Invalided for Discharge 260, Transfers given 33; Discharged otherwise 943 ...	1,493
Remaining on the Rolls at the close of 1871 ...	12,349

NATIVE TROOPS, 1871.

IX.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS of the REGULAR ARMY and of the PUNJAB FRONTIER FORCE serving TRANS-INDUS during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

(This Table contains the entire of the figures shown in the Statement for the Punjab Frontier Force, with the exception of the Statistics of Abbottabad, as well as the Statistics of the Regiments of the Regular Native Army serving beyond the Indus already incorporated in the General Statement for the Punjab).

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																	
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ..	14,614	995	68·1	72	...	...	.	8	7	...	3	5	...	..	39	1	3	...	...	2	1	2	1
February ...	14,426	741	51·4	30	...	...	...	1	4	...	1	...	..	1	19	1	.	...		2		1	. .
March ...	14,262	538	37·7	20	...	...	...	4	3	.	3	1	1	1	12	1	...	. .	.	...	1	2	...
April ...	12,759	377	29·6	16	...	...	1	1	4	1	2	...	...	1	5	.			...	1	.	...	.
May ..	11,904	410	34·4	11	...	.	...	. .	1	...	2	...	...		1	.	. .	...	.	1		2	1
June ...	12,029	441	36·7	13	...	. .	. .	2	6	1	1	1	...	...	...	. .	. .	.				1	1
July ...	12,088	445	36·8	11	...	. .	. .	. .	2	2	...	1	...	. .	2	. .	. .	.		2	1	1	...
August ..	12,020	513	42·7	8	...	1	.		. .	. .	. .	..	...	.	3	1	...	...		.		1	2
September ...	12,143	525	43·2	4	..	..	...	...	1	...	1	..	...	...	1	. .	...		..	.		1	.
October .	12,192	657	53·9	3	. .	. .	...	.		...	1	...	..	. .	.	...	.	.	1	...	...	...	1
November ...	13,883	864	62·2	23	...	...	1	1	5	..	2	1	...	.	8	.	1	.	.	..	...	4	...
December ...	14,373	798	55·5	28	...	...	...	2	7	..	1	2	...	...	13		1		..	1			1
						1	2	19	43	4	17	11	1	3	103	4	5		1	9	3	15	7
						*Died per 1,000 of the Average Strength.																	
For the year ...	13,058	609	46·6	248	18·99	·08	·15	4·75		·30	1·30	·84	·08	·23	7·89	·30	·38		·08	·69	·23	1·15	·54

Absent Deaths, 80. Ratio of 328 Deaths, 21·38 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera .	...	...	...	. .	1	...	...	1	1	...	...	...	3	·2	33·33
Smallpox ..	...	1	1	3	1	1	1		..	...	1	1	10	·8	20·00
Fever, Intermittent ...	1,073	517	446	365	669	477	538	720	752	1,944	1,726	864	10,091	772·8	·19
,, Remittent and Continued ...	43	14	11	18	28	14	9	13	9	34	23	28	244	18·7	17·62
Apoplexy ...	...	...	...	1	. .	1	..	. .	2	1	...	.	5	·4	80·00
Dysentery ...	90	47	52	58	71	95	72	118	158	157	111	168	1,230	94·2	1·17
Diarrhœa	38	20	42	37	60	61	55	79	73	55	64	86	670	51·3	
Hepatitis ..	2	.	2	1	1	2	1	..	3	1	2	1	19	1·4	5·26
Spleen Disease ..	57	20	16	20	26	16	13	14	17	18	34	17	268	20·5	1·12
Respiratory Diseases ..	331	125	85	19	23	21	14	33	47	48	63	98	907	69·5	11·36
Phthisis Pulmonalis ...	2	...	1	1	1	1	1	1	1	3	1	1	17	1·3	29·41
Dropsy ..	.	1	1	..	...	...	...	...	...	..	..	.	2	·2	
Scurvy ..	3	2	.	1	1	2	2	..	2	2	3	2	20	1·5	5·00
Rheumatism ..	113	64	62	44	44	53	42	61	52	49	68	75	727	55·7	·45
Venereal Diseases .	31	30	25	24	26	27	18	35	19	32	25	24	316	24·2	
Eye Diseases ...	16	16	25	27	42	32	32	45	38	36	25	15	349	26·7	
Abscess and Ulcer ...	239	105	90	76	165	184	262	322	185	171	156	188	2,143	164·1	
Wounds and Accidents ...	153	115	121	141	191	113	148	184	122	209	191	178	1,866	142·9	
All other Causes ...	168	87	112	103	124	111	117	134	107	138	141	116	1,461	111·6	
	2,359	1,164	1,002	969	1,480	1,211	1,325	1,790	1,558	2,901	2,634	1,865	20,348		
	Admitted per 1,000 of the Average Strength in each Month.														
	161·4	80·7	76·6	75·9	124·3	100·7	109·6	148·9	128·3	237·9	190·0	129·7	155·8		

NATIVE TROOPS, 1871.

X.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the NATIVE TROOPS serving in the various PROVINCES of the BENGAL PRESIDENCY for the Year 1871.

	Ratios per 1,000 of Strength.							
	Bengal Proper and Assam.	Gangetic Provinces.	Rohilcund and Meerut.	Agra and Central India.	Punjab.	Regular Native Army.	Punjab Frontier Force.	Central India Irregular Force.
1.—Average Daily Sick-rate of each Month.								
January ...	47·4	36·8	30·6	52·3	49·4	44·4	66·3	36·7
February ...	45·2	34·8	25·0	45·3	30·1	37·9	51·5	34·1
March ...	46·9	34·2	24·3	48·4	30·7	35·1	40·1	34·5
April ..	49·3	34·3	23·5	70·7	29·3	37·1	32·6	32·0
May ...	53·8	31·8	23·6	66·3	26·5	36·2	38·0	34·2
June ...	61·3	29·9	24·4	37·1	24·8	33·9	40·9	30·1
July ...	60·8	30·7	28·0	42·6	27·9	36·2	40·4	32·4
August ...	64·6	38·1	32·4	56·9	35·7	43·3	47·4	34·7
September ..	65·7	46·5	37·6	92·3	35·1	40·0	48·9	28·0
October ...	62·6	49·8	37·5	93·0	37·1	49·7	56·8	37·7
November ...	71·7	44·2	32·8	74·0	40·7	47·5	62·8	35·4
December ...	61·4	40·8	31·7	75·2	38·4	48·6	50·3	29·6
Average of the Year ..	57·2	37·7	29·0	62·4	34·9	41·7	49·1	33·3
2.—Composition of the Admission-rate of the Year.								
Cholera ..	2·0	1·4	·7	...	·1	1·3	·3	·7
Intermittent Fevers ..	740·8	520·8	428·6	1317·3	462·3	614·0	820·0	427·7
Remittent and Continued Fevers ...	24·3	11·0	20·1	3·1	7·5	12·5	10·7	11·2
Apoplexy .	...	·5	·2	·3	·2	·2	·5	...
Dysentery ...	164·7	51·6	36·9	85·7	58·2	79·0	87·4	30·6
Diarrhœa .	109·7	28·9	19·0	23·3	27·7	46·8	55·0	28·2
Hepatitis ...	2·9	1·4	1·8	1·0	1·3	1·7	1·2	1·7
Spleen Disease .	19·6	9·6	4·6	9·8	12·3	11·6	15·3	4·7
Respiratory Diseases ...	78·9	42·9	33·2	43·7	50·8	54·6	72·4	36·0
Phthisis Pulmonalis .	4·7	4·4	4·6	2·1	1·5	3·0	1·8	...
Scurvy ...	10·5	4·0	·7	1·0	1·6	3·4	1·7	·7
Rheumatism ..	69·1	62·9	38·2	72·2	51·4	57·4	55·5	38·7
Venereal Diseases ...	35·5	33·8	25·7	44·8	22·1	30·1	27·3	26·8
Eye Diseases ...	22·2	32·5	25·0	21·3	26·9	26·4	25·7	53·4
Abscess and Ulcer ..	93·4	106·3	68·1	138·2	118·8	106·2	172·5	76·5
Wounds and Accidents ..	170·6	120·5	94·7	173·7	121·1	134·8	162·7	97·9
All other causes ..	176·1	108·2	68·1	89·8	85·7	104·5	119·3	104·3
Admission-rate of the Year ..	1731·0	1140·7	870·2	1980·3	1055·5	1287·2	1628·3	939·1
3.—Composition of the Death-rate of the Year								
Cholera ...	1·25	·61	·55	...	·07	·84	·10	...
Fevers ...	3·33	·92	3·65	6·88	2·43	2·64	4·82	4·22
Apoplexy ..	...	·31	·18	..	·07	·13	·39	...
Dysentery ..	2·09	1·68	1·46	·52	·39	1·09	1·47	·99
Diarrhœa ...	2·00	·31	·73	1·55	1·31	1·30	·30	1·49
Hepatitis ...	...	·15	·73	...	·13	·20	.10	...
Spleen Disease ...	·83	·77	·37	..	·26	·43	10	..
Respiratory Diseases ...	2·00	1·84	3·10	1·29	7·29	4·10	7·09	2·98
Heart Diseases ...	·41	...	·37	...	·20	·20	·30	...
Phthisis Pulmonalis ...	1·53	1·38	2·00	·52	·52	1·04	·59	...
Atrophy and Anæmia ...	·83	·15	...	·52	·66	·48	·49	·25
All other causes ...	2·22	1·07	·36	1·55	1·44	1·43	1·68	3·23
Wounds and Accidents ...	..	..	·73	..	·26	·26	·10	..
Deaths out of Hospital ...	1·66	·15	·55	·26	·59	·81	·30	·50
Death-rate of the Year	18·33	9·34	14·78	10·09	15·62	15·04	17·83	13·66
„ including Absent Deaths ...	25·03	13·75	16·13	11·82	18·53	17·81	20·90	14·64
	Died out of each hundred cases treated.							
4.—Mortality relative to the number treated.								
Cholera ...	64·29	44·44	75·00	...	...	64·71	33·33	...
Intermittent Fevers ...	·15	·09	·13	·22	·28	·19	·17	·58
Remittent and Continued Fevers ..	9·14	4·17	15·45	33·33	14·91	11·81	17·50	15·55
Apoplexy ...	...	66·67	...	...	33·33	62·50	80·00	...
Dysentery and Diarrhœa .	1·52	2·47	3·92	3·51	1·99	1·90	1·24	4·24
Hepatitis ...	...	11·11	...	...	10·00	11·77	8·33	...
Spleen Disease ...	4·26	7·94	8·00	...	2·14	3·73	·65	...
Respiratory Diseases ...	2·64	4·29	9·34	2·96	12·82	7·67	9·80	8·28
Phthisis Pulmonalis ..	82·35	31·03	41·00	25·00	34·78	34·45	33·33	...
Scurvy ...	2·63	...	...	...	...	2·22	5·88	...

NATIVE TROOPS, 1871.

XI.

TABLE showing the DAILY AVERAGE SICK-RATE of each STATION in each MONTH.

STATIONS.	Average Strength for the period of observation.	Daily Sick per 1,000 of Average Strength in each Month.												Average Daily Sick per 1,000 of Strength during the period of observation.	Ratio for each Province.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
Fort William	571	60·6	83·6	143·4	73·5	66·1	61·6	62·7	62·4	79·7	96·2	89·1	71·4	77·1	
Allpore	814	53·4	49·9	52·9	33·0	28·9	34·3	45·3	61·0	70·9	85·8	92·6	69·3	56·5	
Dum-Dum	354	36·4	45·8	48·0	37·8	34·3	44·0	32·8	43·8	37·9	62·3	56·5	83·3	45·2	
Barrackpore	529	57·7	46·3	53·2	55·0	22·0	14·9	29·4	37·9	42·4	48·7	58·2	28·9	43·5	
Berhampore	114	52·6	26·3	26·3	26·3	17·5	43·9	52·6	61·4	87·7	87·7	114·0	96·5	61·4	
Dacca	363	69·1	109·1	41·4	66·7	75·6	60·8	68·0	80·4	73·9	55·9	70·3	63·9	68·9	
Cachar and out-posts	754	73·3	38·7	36·3	60·9	69·4	126·9	129·6	171·4	155·9	119·5	157·7	163·6	106·1	
Eastern Frontier out-posts	362	48·3	28·8	39·1	63·3	81·6	135·2	106·6	94·3	82·6	81·7	31·4	28·6	55·2	
Sylhet	143	...	4·0	13·5	22·4	61·1	46·2	69·2	53·8	68·7	55·6	133·3	66·7	42·0	57·2
Shillong	545	51·7	42·1	56·5	47·9	94·7	84·7	77·5	56·5	46·9	30·0	45·6	48·4	58·7	
Gowhatty	295	27·4	58·6	43·5	36·4	50·3	64·7	60·9	49·1	33·2	37·0	38·0	54·3	47·5	
Tezpore	167	59·8	64·5	33·1	47·3	29·1	54·1	65·2	59·5	62·2	51·2	87·4	68·6	53·9	
Nowgong	85	35·7	35·7	46·5	46·5	46·5	58·1	47·1	58·8	47·6	34·9	34·9	34·9	47·1	
Debrooghur	767	41·0	30·5	22·7	28·5	32·8	35·3	30·4	35·6	42·9	35·7	42·0	33·1	33·9	
Buxa	590	41·3	54·0	82·3	81·9	83·3	77·1	55·2	40·0	48·7	60·6	55·0	46·2	59·3	
Julpigoree	523	40·6	30·0	37·0	43·6	51·6	42·9	51·8	43·2	52·0	46·0	42·7	20·8	44·0	
Bhaugulpore	227	24·4	24·4	23·9	28·6	17·0	17·6	13·3	22·2	25·9	16·1	19·0	16·4	22·0	
Dinapore	267	29·0	18·8	25·2	23·4	15·9	12·0	8·1	16·1	29·4	22·1	35·9	38·1	22·5	
Segowlie	290	19·0	19·4	19·4	22·5	30·8	20·2	21·6	17·9	31·6	27·1	26·4	16·5	24·1	
Benares	551	42·0	51·8	52·1	40·0	28·6	28·4	23·9	26·0	35·4	46·1	33·8	39·9	38·1	
Chunar	70	28·6	...	14·3	28·6	14·3	14·3	28·6	42·9	14·3	14·3	14·3	14·3	14·3	
Goruckpore	690	34·9	32·3	25·3	33·5	39·6	15·7	44·5	74·5	106·6	102·2	88·8	95·6	59·4	
Fyzabad	626	27·2	24·1	27·6	20·9	27·2	24·8	17·6	20·9	20·9	22·4	28·4	24·8	24·0	
Lucknow	1,615	34·6	37·0	32·7	42·3	35·5	32·4	35·9	41·8	41·1	39·6	35·6	29·2	36·5	37·7
Seetapore (10 months)	423	31·0	39·7	41·7	30·4	45·5	44·8	46·6	63·5	41·9	49·8	..	.	42·6	
Futtehghur	175	34·1	28·4	39·8	23·0	28·6	31·7	34·5	34·1	28·6	40·0	39·8	51·1	34·3	
Cawnpore	813	29·6	24·1	22·5	18·9	25·1	22·0	31·3	34·5	62·4	67·7	47·1	38·6	34·4	
Allahabad	958	62·5	48·7	49·9	51·2	29·2	21·3	18·6	24·3	34·3	36·4	39·6	33·6	38·6	
Nagode (10 months)	111	...	..	33·6	28·8	48·1	55·6	91·8	117·6	170·0	173·9	146·2	100·0	99·1	
Shahjehanpore	306	14·6	17·6	8·8	13·3	21·1	7·0	10·5	17·9	18·3	23·9	27·3	27·9	16·3	
Bareilly	828	28·1	19·7	18·0	17·4	22·2	16·8	21·1	18·8	23·8	27·0	30·3	29·7	21·7	
Moradabad	386	17·2	14·7	12·3	8·2	8·5	11·3	16·3	27·1	24·4	20·7	16·5	14·1	15·5	
Almorah	588	33·1	35·8	34·8	29·0	37·4	41·9	41·1	39·0	43·8	44·1	38·9	...	37·1	
Raneekhet (11 months)	630	19·4	21·1	17·9	16·4	22·7	22·0	23·9	26·8	20·1	19·8	25·8	..	20·6	
Chuckrata (5 months)	257	..	.	..	.		19·7	11·4	14·5	3·6	15·0	...		11·7	29·0
Deyrah	556	26·7	22·6	31·3	27·1	21·0	21·6	29·8	31·2	44·2	45·1	45·0	35·4	30·6	
Roorkee	548	22·7	15·0	11·7	13·9	16·2	13·6	22·0	20·4	45·0	36·6	11·7	..	20·1	
Meerut	890	44·1	36·5	31·0	32·2	19·8	26·6	29·9	42·7	53·8	44·9	27·3	39·1	36·0	
Delhi	690	49·7	33·2	39·4	41·5	39·3	46·1	50·8	63·1	64·2	69·8	58·6	45·4	49·3	
Agra	1,018	55·7	52·0	53·7	45·4	40·4	30·6	34·7	46·6	55·7	64·5	52·5	62·3	49·1	
Morar	1,519	57·0	47·6	55·7	111·9	107·0	45·3	55·5	73·3	124·3	125·7	110·4	108·3	83·6	
Jhansi	643	16·5	14·1	14·1	19·8	11·5	12·3	13·0	23·6	77·5	65·2	48·0	41·2	29·5	
Nowgong	278	59·6	62·6	89·1	61·1	54·8	41·3	36·4	58·8	90·1	104·8	57·8	57·0	61·7	62·1
Lullutpore	73	27·4		13·7	40·5	67·6	67·6	40·5	54·1	81·1	94·6	92·3	55·6	54·8	
Deolee	218	99·7	73·6	41·2	60·0	76·0	62·9	90·4	84·2	73·0	73·9	49·4	50·0	68·8	
Temporary Detachments, Ulwar and Sambhur	114	24·4	.	..	76·1	50·0	72·7	64·5	58·0	96·6	77·3	79·2	73·2	70·2	
Umballa	771	50·2	48·5	39·1	33·1	36·0	25·5	23·9	43·0	47·5	24·9	44·0	49·4	37·6	
Simla (8 months)	164	...			28·4	39·8	45·5	39·8	39·8	39·8	28·4	13·0	..	36·6	
Loodianah and Phillour	74	54·1	27·0	27·0	27·0	67·6	27·0	94·6	67·6	13·5	27·0	13·5	13·5	40·5	
Jullundur	615	86·4	68·4	48·7	42·8	37·2	41·5	63·2	97·5	101·4	87·6	72·2	71·0	68·3	
Ferozepore	617	13·0	20·0	23·3	47·0	23·0	9·5	19·2	21·9	9·0	17·4	21·6	21·0	21·1	
Mooltan	909	61·5	63·9	55·1	49·7	24·2	19·4	26·2	36·0	29·0	23·4	28·9	33·0	38·0	
Sealkote	932	15·2	21·3	13·6	21·5	22·3	15·6	18·0	27·1	32·5	22·7	18·5	22·6	21·5	
Dhurmsalla	478	20·0	16·2	21·2	27·1	30·1	34·9	30·1	34·0	48·8	44·2	40·4	61·1	31·4	
Bukloh	491	30·3	28·1	33·8	53·7	42·8	38·5	27·4	36·3	39·4	81·4	109·4	88·9	38·7	
Umritsur	202	54·4	40·8	40·8	47·6	51·8	44·4	41·1	34·4	40·4	33·0	45·9	49·6	44·6	31·9
Meean Meer	1,320	66·9	39·0	35·3	30·7	35·9	30·6	33·9	41·4	45·7	40·4	31·6	41·4	39·4	
Jhelum	1,235	21·6	21·0	17·0	20·2	14·3	11·7	20·0	24·5	24·0	21·5	28·1	35·0	21·4	
Rawulpindee	1,171	51·4	44·2	30·3	31·1	26·2	29·1	22·4	28·3	21·1	28·3	36·2	35·4	31·7	
Tallagunge	544	53·9	45·0	28·6	20·6	20·8	21·2	27·7	36·8	26·1	17·6	38·7	35·6	31·2	
Attock	179	61·1	49·7	31·9	16·0	22·7	38·3	50·8	63·6	35·7	52·6	66·3	61·1	44·7	
Huzara (5 months)	513	...	...	...	.	16·3	19·8	28·0	26·0	29·9	...	...	..	23·4	
Murree	67	20·0	20·0	20·4	..	20·8	10·0	20·0	10·0	10·1	.	.	.	14·9	
Nowshera and out posts	817	99·7	49·1	31·5	19·0	21·4	25·6	30·4	39·9	36·2	37·4	41·7	47·5	41·6	
Peshawur and out-posts	3,630	54·6	42·0	27·9	19·4	22·8	24·2	23·5	30·5	29·7	45·6	65·2	46·1	35·7	
PUNJAB FRONTIER FORCE.															
Murdan	897	96·9	74·7	45·4	36·2	37·4	39·0	43·8	63·0	57·6	58·8	55·8	43·9	55·7	
Abbottabad	1,443	40·4	29·1	25·8	23·2	23·9	29·3	28·1	42·8	44·9	41·0	32·8	54·7	34·6	
Kohat	2,386	80·6	55·8	43·1	30·7	32·6	45·5	43·8	49·0	55·7	56·1	66·2	68·6	52·8	
Bunnoo	1,737	58·1	40·5	43·7	39·9	48·8	47·3	50·2	53·6	55·7	82·7	105·1	78·1	58·7	49·1
Dera Ghazee Khan	1,497	67·7	72·2	50·6	41·1	32·5	37·0	32·9	38·2	48·6	69·6	78·5	58·1	53·4	
Dera Ismael Khan	1,677	51·9	40·1	28·6	27·6	50·3	43·3	38·0	39·2	33·1	27·3	32·0	42·8	38·2	
Rajanpore	517	90·6	65·1	49·1	29·2	42·8	37·1	50·3	58·8	45·4	60·9	67·4	44·4	54·2	
CENTRAL INDIA FORCE.															
Augur	200	17·1	11·6	12·7	16·7	13·3	20·6	7·1	7·3	6·8	15·7	12·0	11·1	13·4	
Goonah	332	62·1	41·2	28·8	24·0	101·4	23·9	35·5	33·3	44·5	62·7	31·6	26·4	42·2	
Sirdarpore	[illegible]	23·2	28·2	20·4	11·5	18·2	26·4	36·2	25·9	24·1	21·5	34·5	25·6	25·5	
Kherwarrah	571	40·0	37·8	65·8	48·8	45·8	46·9	38·3	40·8	22·6	35·1	31·1	29·6	40·3	33·3
Erinpoorah	755	30·0	29·8	22·6	22·8	21·0	11·8	16·5	15·3	14·8	21·4	30·3	20·8	22·5	
Deolee	816	58·6	50·6	48·9	48·3	39·1	41·9	47·3	60·8	48·1	58·9	54·1	40·3	50·2	
Sehore	822	24·1	28·5	27·6	33·7	25·6	29·1	34·0	34·9	25·5	41·1	35·4	32·6	31·6	

NATIVE TROOPS, 1871.

XII.

STATEMENT showing the RATIO in which the CHIEF DISEASES have contributed to make up the ADMISSION-RATE of each STATION.

STATIONS.	Average Strength during the period of observation.	Admitted into Hospital per 1,000 of Average Strength.											Admitted per 1,000 of Strength during the period of observation.
		Cholera.	Fevers.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Ophthalmia.	Rheumatism.	Venereal Diseases.	Diseases of the Respiratory Organs.	All other causes.	
Fort William	571	3·5	742·6	168·1	112·1	...	26·3	15·8	84·0	54·3	98·1	534·1	1838·9
Alipore	814	1·2	712·5	205·2	181·8	1·2	19·7	13·5	34·2	43·0	79·0	441·0	1732·2
Dum-Dum	354	2·8	562·2	129·9	73·4	...	17·0	2·8	65·0	14·1	48·0	305·1	1220·3
Barrackpore	529	1·9	455·5	62·4	62·4	...	3·8	5·7	83·2	37·8	60·5	276·0	1049·2
Berhampore	114	...	1035·1	105·3	140·3	...	...	8·8	122·8	8·8	26·3	245·6	1693·0
Dacca	363	5·5	922·9	347·1	168·0	...	2·8	16·5	107·4	35·8	209·4	652·9	2468·3
Cachar and out-posts	754	...	1709·5	246·7	163·1	4·0	33·2	30·5	106·1	55·7	99·5	679·0	3127·3
Eastern Frontier out-posts	362	5·5	1364·6	378·5	110·5	...	27·6	30·4	58·0	24·9	85·6	395·0	2480·6
Sylhet	143	...	776·2	55·9	76·9	...	7·0	7·0	55·9	111·9	28·0	209·8	1328·6
Shillong	545	...	730·3	150·5	77·1	16·5	67·9	27·5	60·5	58·7	44·0	504·6	1737·6
Gowhatty	205	3·4	854·2	78·0	94·9	6·8	3·4	47·5	44·1	30·5	71·2	477·9	1711·9
Tezpore	167	18·0	778·4	143·7	227·5	...	53·9	35·9	125·7	24·0	143·7	874·3	2425·1
Nowgong	85	..	717·7	129·4	47·1	11·8	58·8		58·8	58·8	70·6	258·8	1411·8
Debrooghur	767	1·3	550·3	90·1	43·0	2·6	13·0	33·9	56·1	6·5	44·3	371·6	1250·7
Buxa	590	...	328·8	135·6	139·0	3·4	3·4	13·5	94·9	11·9	125·4	664·4	1520·3
Julpigoree	523	...	416·8	133·8	76·5	1·9	1·9	28·7	34·4	15·3	40·2	239·0	988·5
Bhaugulpore	227	...	167·4	39·7	4·4	...	...	44·0	22·0	61·7	22·0	304·0	665·2
Dinapore	267	...	243·4	22·5	18·7	3·7	...	22·5	56·2	18·7	30·0	239·7	655·4
Segowlie	290	...	165·5	41·4	...	...	..	3·4	6·9	34·5	6·9	96·6	355·2
Benares	551	1·8	486·4	52·6	21·8	...	25·4	12·7	65·3	61·7	20·0	254·1	1001·8
Chunar	70	14·3	542·8	57·1	42·9	...	...	...	57·1	114·3	42·9	200·0	1071·4
Goruckpore	690	...	1027·5	55·1	11·6	2·9	15·9	73·9	52·2	53·6	53·6	311·6	1657·9
Fyzabad	626	..	204·5	47·9	11·2	3·2	4·8	19·2	22·3	30·3	19·2	129·4	492·0
Lucknow	1,645	3·7	485·7	52·9	53·5	·6	6·1	32·8	77·2	18·8	31·0	380·6	1142·9
Seetapore (10 months)	423	...	255·3	40·6	28·4	4·7	4·7	61·5	131·8	30·7	73·3	546·1	1180·1
Futtehghur	175	...	520·0	34·3	45·7	...	5·7	51·4	68·6	120·0	34·3	445·7	1325·7
Cawnpore	813	...	799·5	11·8	36·9	1·2	18·5	20·9	11·8	29·5	86·1	389·9	1406·1
Allahabad	958	1·0	391·4	65·8	11·5	...	7·3	21·9	58·5	13·6	44·9	365·3	981·2
Nagode (10 months)	111	...	1717·7	63·1	45·0	...	...	72·1	162·1	54·1	54·1	909·9	3108·1
Shahjehanpore	306	...	277·8	22·9	6·5	3·3	...	...	22·9	6·5	6·5	160·1	506·5
Bareilly	828	...	146·1	15·7	1·2	..	...	30·2	16·9	13·3	18·1	222·2	463·7
Moradabad	386	...	303·1	25·9	20·7	...	...	10·4	18·1	10·4	20·7	152·9	562·2
Almorah	588	1·7	319·7	28·9	15·3	1·7	6·8	22·1	90·2	74·8	39·1	219·4	819·7
Raneekhet (11 months)	630	...	203·2	69·8	15·9	...	..	28·6	38·1	23·8	34·9	234·9	649·2
Chuckrata (5 months)	257	...	85·6	7·8	11·7	...	...	...	7·8	3·9	7·8	58·3	182·9
Deyrah	556	...	255·4	10·8	21·6	9·0	27·0	68·3	23·4	50·3	12·6	235·6	714·0
Roorkee	548	..	421·5	12·8	23·7	...	5·5	23·7	21·9	20·1	54·7	228·1	812·0
Meerut	890	1·1	736·0	70·8	28·1	2·3	2·3	24·7	58·4	20·2	64·0	294·4	1302·3
Delhi	690	2·9	1111·5	47·8	30·4	1·5	1·5	5·8	30·2	10·1	23·2	279·7	1544·6
Agra	1,018	...	894·9	13·8	23·6	2·9	3·9	16·7	109·0	50·1	37·3	475·5	1627·7
Morar	1,519	...	2011·2	52·0	25·0	·7	9·2	27·0	67·9	53·3	61·9	427·9	2726·1
Jhansi	643	..	471·2	31·1	17·1	...	6·2	32·7	31·1	28·0	15·6	133·7	766·7
Nowgong	278	...	1086·3	57·5	10·8	...	25·2	36·0	118·7	10·8	32·4	586·3	1964·0
Lullutpore	73	..	1808·2	27·4	13·7	...	...	13·7	27·4	13·7	41·1	452·1	2397·3
Deolee	218	...	990·8	22·9	41·3	...	9·2	4·6	50·6	68·8	45·9	426·6	1660·7
Temporary Detachments, Ulwar and Sambhur	114	...	1605·3	17·5	35·1	...	61·4	26·3	122·8	35·1	43·9	464·9	2412·3
Umballa	771	...	476·0	35·0	16·9	1·3	1·3	36·3	35·0	25·9	38·9	313·9	980·5
Simla (8 months)	164	...	420·7	30·5	12·2	..	...	18·3	18·3	73·2		207·3	780·5
Loodianah and Phillour	74	..	1324·3	13·5	...	...	..	13·5	..	40·5	54·1	405·4	1851·3
Jullundur	615	..	487·8	53·7	6·5	8·1	50·4	27·6	34·2	21·1	50·4	330·1	1069·9
Ferozepore	617	...	166·9	16·2	11·6	1·6	3·2	43·8	35·7	27·5	45·4	363·1	718·0
Mooltan	499	.	216·2	34·0	12·0	...	2·0	17·0	25·0	8·0	65·1	212·3	621·6
Sealkote	932	...	304·7	36·5	1·1	..	1·1	42·9	26·8	9·7	16·1	217·8	656·7
Dhurmsalla	478	.	573·2	25·1	14·6	2·1	4·2	31·4	50·2	52·3	33·5	315·9	1102·5
Bukloh	491	.	352·3	12·2	55·0	2·0	16·3	16·3	97·8	16·3	48·9	814·7	1431·8
Umritsur	202	.	643·6	123·8	49·5	4·9	4·9	24·8	113·8	44·6	44·6	435·6	1490·1
Meean Meer	1,320	...	376·5	72·7	36·4	1·5	6·1	33·3	79·6	19·7	140·2	413·6	1188·6
Jhelum	1,235	...	283·4	58·4	10·5	·8	·8	23·5	42·1	13·0	39·7	247·8	715·0
Rawulpindee	1,471	..	311·3	34·7	19·0	...	2·0	17·0	54·4	25·8	38·8	227·1	730·1
Tallagunge	544	.	498·2	64·4	33·1	...	11·0	25·7	88·2	14·7	66·2	382·7	1184·2
Attock	179	...	759·8	55·9	67·0	...	5·6	27·9	83·8	72·6	11·2	195·5	1279·3
Huzara (5 months)	513	2·0	113·1	17·5	2·0	...	.	11·7	13·6	2·0	5·8	126·7	294·4
Murree	67	...	104·5	14·9	59·7	...	...	29·9	14·9	14·9	14·9	119·4	373·1
Nowshera and out-posts	817	..	711·7	161·8	17·1	1·2	8·6	20·8	47·7	22·0	53·9	395·3	1463·8
Peshawur and out-posts	3,530	..	670·8	72·8	52·1	·9	31·7	27·8	56·1	19·6	56·0	330·0	1318·7
PUNJAB FRONTIER FORCE.													
Murdan	897	1·1	456·0	39·0	40·1	3·3	6·7	51·3	43·5	25·6	81·4	454·8	1211·8
Abbottabad	1,443	..	807·3	27·0	60·3	...	4·2	18·7	50·6	33·3	50·6	358·3	1410·3
Kohat	2,386	..	1043·2	108·1	75·9	·4	15·1	26·8	48·2	29·8	96·8	469·0	1913·3
Bunnoo	1,737	·6	971·2	110·0	69·1	3·4	39·1	19·6	72·6	23·6	91·0	480·1	1880·3
Dera Ghazee Khan	1,497	...	801·3	72·8	27·4	1·3	17·4	23·4	68·1	18·0	87·5	470·3	1590·5
Dera Ismael Khan	1,077	·6	517·0	119·9	44·7	..	7·8	27·4	44·7	35·8	28·0	376·3	1202·2
Rajanpore	517	...	1363·6	106·4	21·3	..	...	17·4	63·8	13·5	42·6	657·7	2286·3
CENTRAL INDIA FORCE.													
Augur	299	..	117·1	13·4	10·0	...	...	10·0	13·4	...	10·0	100·3	274·2
Goonah	332	3·0	424·7	51·2	6·0	12·1	12·1	39·2	36·1	30·1	6·0	228·9	849·4
Sirdarpore	432	...	312·5	7·0	34·7	.	2·3	78·7	25·5	34·7	34·7	185·2	715·3
Kherwarrah	571	1·8	537·7	17·5	35·0	1·8	...	59·5	38·5	7·0	56·0	553·4	1308·2
Erinpoorah	755	...	201·0	6·6	10·6	...	1·3	47·7	14·6	30·5	27·8	131·1	474·2
Deolee	816	...	552·7	24·5	23·3	1·2	8·6	66·2	63·7	42·9	66·2	419·1	1268·4
Sehore	822	1·2	661·8	77·9	56·0	1·2	7·3	49·9	53·5	25·5	21·9	221·4	1177·6

NATIVE TROOPS, 1871.

XIII.

TABLE showing the MORTALITY in each STATION, the CAUSES of DEATHS, and the RATIO of DEATHS to STRENGTH.

STATIONS.	Average Strength for the period of observation.	Causes of Deaths in Regimental Hospitals.																		Total Deaths. A	Total Deaths. B	Died per 1,000 of Average Strength. A With their Regiments. a.	b.	c.	B
		Cholera.	Small-pox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.	Of men present with their Regiments.	Of men absent from their Regiments.	Cholera.	All other Causes.	All Causes.	All Deaths, absent and present.
Troops marching in Bengal and N.-W. Provinces	...	...		1	1		1	3	1	...	1					...	2	1	1	15	..		..	..	
Looshaie Field Force, and Troops on the march towards the Eastern Frontier		16				1		1			1	...						2	5*	26			...		
Fort William	571	2		1	2			2		2	1		1				...	1	...	15		3·50	22·77	26·27	..
Alipore	811	1		1	1		3	3		3	2				1	1				19		1·23	22·11	23·34	...
Dum-Dum	351			1			1				2							1		5			14·13	14·13	...
Barrackpore	529	1		1			1			1	1		2					...		7		1·89	11·34	13·23	
Berhampore	114			...				1												1	...		8·77	8·77	
Dacca	363	1	...	...			1				1					1		1		5		2·75	11·02	13·77	...
Cachar and out-posts	1,116	1			8		1	6		...	3		1					3	10†	36		·90	31·36	32·26	
Sylhet	143			1							1									2			14·00	14·00	
Shillong	545						1				2							4		7			12·84	12·84	
Gowhatty	295	1		1	1							1				3				7		3·39	20·34	23·73	
Tezpore	167	2					1	...				1								4		11·97	11·97	23·95	
Nowgong	85	...																			...				
Debrooghur and Upper Assam	767			1			1				1	1	5					1	2	10	..		13·04	13·04	
Buxa	590			...			2	2					1		1			2		8			13·56	13·56	
Julpigoree	523	...			1			1			...					1		1		4			7·65	7·65	
Bhaugulpore	227			1							1									2			8·81	8·81	
	7,203	9		8	16		15	15		6	15	3	11		2	6		14	12	132‡	71	1·25	17·08	18·33	25·03
Dinapore	267	...														1		1		2			7·49	7·49	..
Segowlie	290			1																1			3·45	3·45	
Benares	551	1					1						1							3		1·81	3·63	5·44	
Chunar	70																								
Goruckpore	690				1	...	2			1	1		3					2		10			14·49	14·49	
Fyzabad	626			1	1					1	1		2							6			9·59	9·59	
Lucknow	1,615	2		...			1	1	1	2	3							1	1	15		1·24	7·90	9·12	
Seetapore (10 months)	123																								
Futteghur	175										1									1			5·71	5·71	
Cawnpore	813					1					1		3	1						6			7·38	7·38	..
Allahabad	958	1		1	1	1	1	1		1	5							2		17	...	1·04	16·71	17·75	
Nagode (10 months)	111																								
	6,630	1		3	3	2	11	2	1	5	12		9	1		1		6	1	61	38	·15	8·73	9·31	13·75
Shahjehanpore	306				1								1							2	...	..	6·54	6·54	
Bareilly	828			1	1		1						2				2			7			8·45	8·45	
Roorkee	548					...		2			3	1	1			...				7			12·77	12·77	
Raneekhet (11 months)	630				1		1		1		1						1			11			17·46	17·46	
Chuckrata (5 months)	257				1		1											1	1	4			15·56	15·56	
Almorah	588	1			1				1		2		3		1				1	10		1·70	15·31	17·01	
Deyrah	556				1				1	2	1		4				1			10			17·99	17·99	
Moradabad	386				1								...							1			2·59	2·59	
Meerut	890	1		2	3	1	2	2			4	1					..			16	..	1·12	16·86	17·98	
Delhi	690	1			7				1		3			...					1	13		1·45	17·39	18·84	..
	5,478	3		3	17	1	8	1	1	2	17	2	11		1		4	1	3	81	32	·55	14·23	14·78	16·13
Agra	1,018			2	2			2			2		1	1		1		2		13			12·77	12·77	..
Morar	1,519	...		4			2				1		1					1		9	..		5·92	5·92	
Jhansi	643			2	2			2			2					1		1	1	11			17·11	17·11	
Nowgong	278			1				1										1		3			10·80	10·80	
Lullutpore	73			...																					
Deolee	218			1				1			...									2			9·18	9·18	
Temporary Detachments in Rajpootana	114		...	1				...												1			8·77	8·77	
	3,864			11	4		2	6			5		2	1		2		5	1	39	18	...	10·09	10·09	11·82
Umballa	771				1		1				1							2		8			10·38	10·38	..
Simla (8 months)	164																					...	..	..	...
Loodianah	37					..															...				...
Phillour	37			...					...															..	
Jullundur	615			1	1			1		2	1		1			2		1		13		..	21·14	21·14	..
Ferozepore	617	..		..	2						2						1	1		6	..		9·72	9·72	..
Mooltan	999							1			1					...	1	2		8	..		8·01	8·01	
Sealkote	932	..		1							...							1		2			2·15	2·15	
Jhelum	1,235										3	1								4	..	...	3·24	3·24	...
Bukloh	491		..	..	1							1	1			1		1		5			10·18	10·18	
Umritsur	202				1						2								1	4	...		19·80	19·80	...
Meean Meer	1,320		...	1	..		1	5	1		27		1			...		1	1	38			28·79	28·79	
Dhurmsalla	478	...					1		1		4					1		1		8		..	16·74	16·74	
Rawulpindee	1,471			7	2			1			21					1		1	1	40			27·19	27·19	...
Tallagunge	544			1		1												1		8	..		14·71	14·71	...
Attock	179			..															1	1	...		5·59	5·59	...
Huzara (5 months)	513	1									1							1		3		1·95	3·90	5·85	..
Murree	67		...	...				1								1				2			29·85	29·85	..
Nowshera and out-posts	817										8		1							9			11·02	11·02	..
Peshawur and out-posts	3,530			8	8		3	8	...	2	26	1	1			1	2	1	5	73	...		20·68	20·68	
Troops on march, Punjab	...			1	1						3							1		6	...	...		..	
	15,231	1	..	20	17	1	6	20	2	4	111	3	8			10	1	22	9	238	81	·07	15·55	15·62	18·63
Army of the Presidency	39,370	33		46	58	5	43	61	8	17	165	8	41	2	3	19	10	51	37	592	240	·84	14·20	15·04	17·81
Central India Force	4,026		..	10	7		4	6			12					1		13	2	55	27		13·66	13·66	14·61
Punjab Frontier Force	10,153	1	2	11	35	4	15	3	1	1	72	3	6	1	1	5	1	13	3	181	76	·10	17·73	17·83	24·90

---

* Five killed in action.

† Eight killed in action; excluding these deaths, the ratio becomes 25·09 per 1,000.

‡ Including deaths shown in the previous column as occurring in the Loshaie Field Force, and on the march.

NATIVE TROOPS, 1871.

XIV.

TABLE showing the PREVALENCE of CHOLERA in each MONTH, and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength during the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength for each Province.	Total Deaths of the Year.	Death-rate per 1,000 of Strength for each Province.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Troops on march, Bengal and N.-W. Provinces	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Looshaie Field Force, with General Hospitals	...	...	...	...	...	...	...	...	...	...	...	6	17	23	...	16	...
Fort William	571	...	...	...	...	...	...	...	...	...	1	...	1	2	2·0	2	1·25
Allipore	814	...	...	...	1	...	...	...	...	...	...	...	...	1		1	
Dum-Dum	364	...	...	...	...	...	...	...	...	...	1	...	...	1		...	
Barrackpore	520	...	...	...	1	...	...	...	...	...	...	...	...	1		1	
Berhampore	114	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dacca	363	...	...	...	...	...	...	...	...	...	...	1	1	2		1	
Cachar and out-posts	754	...	...	...	...	...	...	...	...	...	...	...	...	...		1	
Eastern Frontier out-posts	362	...	...	...	...	...	...	1	...	...	...	1	...	2		...	
Sylhet	143	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Shillong	545	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Gowhatty	295	...	...	...	...	...	...	...	1	...	...	...	...	1		1	
Tezpore	167	...	...	...	...	...	1	2	...	...	...	...	...	3		2	
Nowgong	85	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Debrooghur	767	...	...	...	...	...	...	...	...	1	...	...	...	1		...	
Buxa	600	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Julpigoree	523	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Bhaugulpore	227	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dinapore	267	...	...	...	...	...	...	...	...	...	...	...	...	...	1·4	...	·61
Segowlie	290	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Benares	551	...	...	...	1	...	...	...	...	...	...	...	...	1		1	
Chunar	70	...	...	...	...	...	1	...	...	...	...	...	...	1		...	
Goruckpore	690	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Fyzabad	626	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Lucknow	1,045	...	...	...	...	...	...	...	...	...	3	3	...	6		2	
Seetapore (10 months)	423	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Futteghur	175	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Cawnpore	813	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Allahabad	958	...	...	...	...	...	...	...	...	...	...	1	...	1		1	
Nagode (10 months)	111	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Shahjehanpore	306	...	...	...	...	...	...	...	...	...	...	...	...	...	·7	...	·55
Bareilly	828	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Moradabad	386	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Almorah	588	...	...	...	...	...	...	...	1	...	...	...	...	1		1	
Raneekhet (11 months)	630	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Chuckrata (5 months)	257	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Deyrah	550	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Roorkee	548	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Meerut	890	...	...	...	...	...	...	...	...	...	...	...	1	1		1	
Delhi	690	...	...	...	...	2	...	...	...	...	...	...	...	2		1	
Agra	1,018	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar	1,519	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Jhansi	643	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Nowgong	278	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Lullutpore	73	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Deolee	218	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Temporary Detachments, Ulwar and Sambhur	114	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Umballa	771	...	...	...	...	...	...	...	...	...	...	...	...	...	·1	...	·07
Simla (8 months)	164	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Loodianah and Phillour	74	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Jullundur	615	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Ferozepore	617	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Mooltan	999	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Sealkote	932	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dhurmsalla	478	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Bukloh	491	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Umritsur	202	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Meean Meer	1,320	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Jhelum	1,235	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Rawulpindee	1,471	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Tallagunge	544	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Attock	179	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Huzara (5 months)	513	...	...	...	...	...	...	1	...	...	...	...	...	1		1	
Murree	67	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Nowshera and out-posts	817	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Peshawur and out-posts	3,530	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Troops on march, Punjab	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
TOTAL	39,379	...	...	...	3	2	2	4	2	1	5	12	20	51	1·3	33	·84
Murdan	897	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	·10
Abbottabad	1,443	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Kohat	2,386	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Bunnoo	1,737	...	...	...	...	1	...	...	...	...	...	...	...	1		...	
Dera Ghazee Khan	1,497	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dera Ismael Khan	1,077	...	...	...	...	...	...	...	1	...	...	...	...	1		1	
Rajanpore	517	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
TOTAL	10,153	...	...	...	...	1	...	...	1	1	...	...	...	3	·3	1	·10
Augur	299	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goonah	332	...	...	...	...	1	...	...	...	...	...	...	...	1		...	
Sirdarpore	432	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Kherwarrah	571	...	...	...	...	...	...	...	...	...	...	1	...	1		...	
Erinpoorah	755	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Deoloo	816	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Sehore	822	...	...	...	...	...	...	1	...	...	...	...	...	1		...	
TOTAL	4,028	...	...	...	...	1	...	1	...	...	...	1	...	3	·7	...	...

NATIVE TROOPS, 1871.

XV.

TABLE showing the PREVALENCE of FEVER in each MONTH, and the DISTRIBUTION of FEVERS by STATIONS and PROVINCES.

STATIONS AND AVERAGE STRENGTH DURING THE PERIOD OF OCCUPATION.		NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admission rate per 1,000 of Strength.	Admission-rate for each Province.	Total Deaths of the Year.	Death-rate for each Province.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.					
Fort William	571	25	27	18	15	43	25	43	60	47	62	26	33	424	742·6	766·1	3	3·33
Alipore	814	43	40	22	19	21	31	52	85	61	86	73	47	580	712·5		5	
Dum-Dum	354	9	9	8	8	13	10	11	28	20	39	38	6	199	562·2		1	
Barrackpore	529	28	24	20	19	4	5	22	42	22	31	18	6	241	455·5		1	
Berhampore	114	5	1	3	2	2	8	7	18	20	17	16	19	118	1035·1		...	
Dacca	363	3	10	19	42	35	14	35	52	36	42	34	13	335	922·9		...	
Cachar and out-posts	754	13	13	24	56	145	195	165	217	133	132	100	96	1,289	1709·5		8	
Eastern Frontier out-posts	362	...	8	24	16	71	73	50	48	43	28	70	63	494	1364·6		...	
Sylhet	143	...	5	6	9	21	16	14	9	10	13	6	2	111	776·2		1	
Shillong	545	11	15	18	11	31	84	58	43	39	52	20	16	398	730·3		...	
Gowhatty	295	36	22	18	14	34	25	22	19	15	19	16	12	252	854·2		2	
Tezpore	167	12	7	3	1	8	10	11	16	22	26	10	4	130	778·4		...	
Nowgong	85	2	6	6	5	3	6	3	3	7	9	8	3	61	717·7		...	
Debrooghur	767	40	21	24	21	27	25	31	55	58	71	34	22	429	559·3		1	
Buxa	590	9	14	10	12	20	25	15	17	14	23	14	21	194	328·8		...	
Julpigoree	523	3	2	5	5	23	33	33	24	31	32	23	4	218	416·8		1	
Bhaugulpore	227	2	2	4	5	3	2	2	7	5	5	...	1	38	167·4		1	
MONTHLY PERCENTAGE OF THE TOTAL		4·4	4·1	4·2	4·7	10·0	9·7	10·4	13·5	10·6	12·5	9·2	6·7	...	100·0	...	...	...
Dinapore	267	4	1	4	6	6	1	2	7	6	17	6	5	65	243·4	531·8	...	·92
Segowlie	290	1	3	...	4	4	1	1	7	10	12	4	1	48	165·5		1	
Benares	551	10	14	14	16	19	4	1	37	51	73	23	6	268	486·4		...	
Chunar	70	6	3	...	5	2	...	3	9	1	9	...	...	38	542·8		...	
Goruckpore	690	26	14	11	17	22	36	51	89	81	133	124	105	709	1027·5		1	
Fyzabad	626	15	7	9	5	11	6	3	11	10	15	18	18	128	204·5		2	
Lucknow	1,645	61	57	47	59	56	45	61	99	89	130	62	33	799	485·7		...	
Seetapore (10 months)	423	7	5	3	9	9	10	8	11	19	27	...	...	108	255·3		...	
Futtehghur	175	4	4	7	4	7	3	3	8	5	15	18	13	91	520·0		...	
Cawnpore	813	48	19	4	14	28	19	24	53	107	234	75	25	650	799·5		...	
Allahabad	958	45	27	34	27	33	19	18	33	41	54	30	14	375	391·4		2	
Nagode (10 months)	111	...	..	6	1	5	5	8	21	30	74	28	17	194	1747·7		...	
MONTHLY PERCENTAGE OF THE TOTAL		6·5	1·4	4·0	4·8	5·8	4·3	5·3	11·1	13·0	22·8	11·1	6·9	. .	100·0	...	...	...
Shahjehanpore	306	5	14	3	3	5	8	4	12	6	11	15	4	85	277·8	448·7	1	3·65
Bareilly	828	19	9	6	4	10	5	14	11	17	12	13	1	121	146·1		2	
Moradabad	386	14	3	2	5	6	7	8	17	17	16	14	8	117	303·1		1	
Almorah	588	5	6	20	11	21	24	22	23	22	25	9	...	188	319·7		1	
Raneekhet (11 months)	630	9	2	3	4	11	8	14	29	25	14	9	...	128	203·2		1	
Chuckrata (5 months)	257	...	...	...	...	...	3	3	5	6	5	...	...	22	85·6		1	
Deyrah	556	1	6	10	7	7	11	17	16	40	16	10	1	142	255·4		1	
Roorkee	548	21	7	7	8	26	17	22	39	45	36	3	...	231	421·5		...	
Meerut	890	19	14	40	29	22	35	45	163	131	107	41	19	655	736·0		5	
Delhi	690	55	25	40	37	68	47	59	88	118	127	61	44	769	1114·5		7	
MONTHLY PERCENTAGE OF THE TOTAL		6·0	3·5	5·3	4·4	7·2	6·5	8·5	16·0	17·4	15·0	7·1	3·1	...	100·0	...	...	...
Agra	1,018	69	58	48	33	82	31	54	100	128	157	116	20	911	894·9	1320·4	4	3·88
Morar	1,519	165	98	139	423	421	130	205	257	297	418	281	221	3,055	2011·2		4	
Jhansi	643	20	7	11	17	7	9	7	29	111	61	19	15	303	471·2		4	
Nowgong	278	21	20	49	20	9	12	9	31	33	56	27	15	302	1086·3		1	
Lullutpore	73	4	3	1	7	14	15	11	6	20	32	12	7	132	1808·2		...	
Deolee	218	30	14	8	12	27	14	22	29	19	26	4	11	216	990·8		1	
Temporary Detachments at Ulwar and Sambhur	114	4	1	2	17	10	8	6	30	36	35	27	7	183	1605·3		1	
MONTHLY PERCENTAGE OF THE TOTAL		6·1	4·0	5·1	10·4	11·2	4·3	6·1	9·6	12·6	15·2	9·5	5·9	...	100·0	...	...	...
Umballa	771	14	2	8	8	10	20	28	121	115	23	10	2	367	476·0	469·8	1	2·43
Simla (8 months)	164	...	...	...	11	20	11	8	5	8	5	1	...	69	420·7		...	
Loodianah and Phillour	74	5	5	5	6	12	6	22	27	3	3	3	1	98	1324·3		...	
Jullundur	615	17	15	14	12	14	20	29	74	51	18	25	11	300	487·8		2	
Ferozepore	617	4	11	7	16	10	9	10	15	4	8	5	4	103	166·9		2	
Mooltan	999	17	11	9	1	15	11	14	32	23	29	24	30	216	216·2		...	
Sealkote	932	20	15	11	10	33	20	16	75	42	28	7	7	284	304·7		1	
Dhurmsalla	478	14	8	21	20	25	15	20	40	49	27	26	9	274	573·2		...	
Bukloh	491	9	12	11	17	14	11	8	36	32	13	5	5	173	352·3		1	
Umritsur	202	14	6	3	5	7	6	11	35	19	15	6	3	130	643·6		1	
Meean Meer	1,320	46	32	28	29	58	36	66	70	42	43	29	18	497	376·5		1	
Jhelum	1,235	45	33	20	20	29	25	26	40	27	30	18	37	350	283·4		...	
Rawulpindee	1,471	92	52	31	43	28	40	28	10	18	37	38	41	458	311·3		9	
Tallagunge	544	40	20	7	15	14	21	17	32	18	28	41	18	271	498·2		1	
Attock	179	26	6	3	3	9	9	12	12	3	13	27	13	136	759·8		...	
Huzara (5 months)	513	...	...	...	...	12	8	7	16	15	...	...	...	58	113·1		...	
Murree	67	1	1	1	...	2	1	1	...	...	...	...	...	7	104·5		...	
Nowshera and out-posts	817	183	56	32	14	24	10	45	40	31	51	72	39	606	741·7		...	
Peshawur and out-posts	3,530	197	99	73	79	156	92	109	153	224	581	438	167	2,368	670·8		16	
MONTHLY PERCENTAGE OF THE TOTAL		10·4	5·4	4·0	4·3	6·9	5·3	6·7	11·8	10·1	15·5	12·5	7·3	...	100·0	...	...	...
MONTHLY PERCENTAGE OF THE TOTAL FOR THE PRESIDENCY	...	6·8	4·3	4·2	5·6	8·1	5·8	7·1	11·5	11·5	15·3	10·8	9·0	...	100·0	...	...	...
Murdan	897	31	18	30	18	24	35	27	51	26	90	49	20	409	456·0	839·7	...	4·82
Abbottabad	1,443	96	42	50	59	86	84	79	104	204	158	65	79	1,165	807·3		3	
Kohat	2,386	273	109	120	84	132	124	207	211	181	427	434	187	2,489	1043·2		16	
Bunnoo	1,737	159	54	63	55	96	74	69	108	83	321	343	262	1,687	971·2		12	
Dera Ghazee Khan	1,407	118	80	41	59	62	40	30	59	127	285	217	86	1,204	804·3		10	
Dera Ismael Khan	1,677	77	39	39	41	116	79	35	78	63	89	103	78	867	517·0		7	
Rajanpore	517	78	78	69	33	57	28	25	33	26	134	93	53	705	1363·6		1	
MONTHLY PERCENTAGE OF THE TOTAL		9·8	4·9	4·7	4·1	7·1	5·4	5·5	8·3	8·3	17·6	15·3	9·0	...	100·0	...	...	...
Augur	299	3	3	...	4	...	2	3	2	8	6	4	6	35	117·1	438·9	...	4·22
Goonah	332	13	12	5	5	5	9	10	19	16	36	9	2	141	424·7		1	
Sirdarpore	432	8	19	9	8	5	6	10	9	19	15	12	15	135	312·5		5	
Kherwarrah	571	22	26	52	19	12	18	15	23	10	47	36	27	307	537·7		5	
Erinpoorah	755	16	8	11	15	7	3	4	8	13	37	20	12	154	204·0		2	
Deolee	816	35	29	34	15	27	16	28	81	62	63	37	24	451	552·7		3	
Sehore	822	30	28	40	48	38	36	43	54	31	95	61	40	544	661·8		1	
MONTHLY PERCENTAGE OF THE TOTAL		7·2	7·1	8·6	6·5	5·3	5·1	6·4	11·1	8·7	16·8	10·1	7·1	...	100·0	...	...	...

NATIVE

X

ABSTRACT of the RETURNS showing the ADMISSIONS,

(The Statistics in this Table must not be regarded as showing with

1.—*REGIMENTS of BENGAL*

	Regiment and Station of 1871.	Date of Arrival from Station previously occupied.	Regimental Strength.		Admission-rate of 1871 per 1,000 of the Average Strength.*	Invalided.		Died.		Loss per 1000.	
			Number borne on the Rolls.	Average Strength present during 1871.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.*	By Deaths.*
1	13th Native Infantry, Fort William ...	December 1869, from Jullundur ...	680	623	1570·5	27	26	20	10	37·74	43·54
2	8th Native Infantry, Alipore ...	December 1869, from Jhansi ...	646	570	1509·3	20	8	16	7	12·38	35·60
3	Body Guard, Ballygunge ...	......	105	72	1986·1	3	18	...	1	171·43	9·52
4	11th Native Infantry, Dum-Dum, with Detachment of 180 men at Alipore, and of 175 men at Barrackpore for 7 months ...	November 1868, from Dinapore ...	718	646	1577·4	25	18	13	6	25·07	26·46
5	22nd Native Infantry, Dacca and out-posts on Eastern Frontier, with Detachment of 206 men at Barrackpore ...	December 1869, from Morar ..	672	656	2554·9	21	14	7	2	20·83	13·39
6	4th Native Infantry, Cachar, and out-posts on Eastern Frontier ...	December 1870, from Allahabad ...	698	667	3001·4	28	34	33	3	48·71	51·58
7	44th Native Infantry, Shillong, with Detachments at Sylhet and Cachar and on Eastern Frontier ...	A Local Corps ...	883	878	1784·7	4	9	15	2	10·19	19·25
8	43rd Native Infantry, Gowhatty, with Detachments at Nowgong, Tezpore and Shillong	A Local Corps ...	853	864	1804·4	6	8	13	...	9·38	15·24
9	42nd Native Infantry, Debrooghur and out-posts in Upper Assam ...	A Local Corps ...	882	878	1305·2	7	9	12	4	10·20	18·14
10	41st Native Infantry, Buxa ...	December 1868, from Agra ...	685	589	1522·9	32	...	8	12	...	29·20
11	2nd Native Infantry, Julpigoree ...	February 1870, from Alipore ...	689	501	1081·2	43	29	4	8	42·09	17·42
12	Head-Quarters, 37th Native Infantry, Bhaugulpore, with Detachment of 114 men at Berhampore ...	December 1868, from Goruckpore	710†	366	1021·9	9†	1†	6	4†	1·41†	14·09†
	Regiments of Bengal Proper and Assam ...		8,230	7,687	1690·1	225	174	147	59	21·14	25·03

2.—*REGIMENTS of BEHAR, BENARES,*

	Regiment and Station of 1871.	Date of Arrival from Station previously occupied.	Number borne on the Rolls.	Average Strength present during 1871.	Admission-rate of 1871 per 1,000 of the Average Strength.*	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.*	By Deaths.*
1	Wing, 37th Native Infantry, Dinapore ...	November 1869, from Bhaugulpore	...	278	629·5	...	...	(2)	...	...	...
2	4th Bengal Cavalry, Segowlie, with Detachment of 60 men at Goruckpore ...	December 1869, from Bareilly ...	457	387	423·8	7	3	2	2	6·56	8·75
3	5th Native Infantry, Benares, with Detachment of 70 men at Chunar ...	January 1868, from Dacca ...	712	641	1015·6	10	27	3	2	37·92	7·02
4	18th Native Infantry, Goruckpore ...	December 1868, from Bhaugulpore	707	620	1764·5	41	10	9	8	14·14	24·05
5	38th Native Infantry, Fyzabad ...	November 1868, from Nagode ...	705	623	402·8	14	8	5	2	11·35	9·93
6	13th Bengal Cavalry, Lucknow ...	March 1868, from Peshawur ...	457	383	898·2	10	16	1	...	35·01	2·19
7	7th Native Infantry, Lucknow ...	February 1871, from Dacca and Cachar ...	688	627	1500·8	8	17	5	4	24·71	13·08
8	9th Native Infantry, Lucknow ...	February 1870, from Barrackpore	707	631	939·8	17	23	9	15	32·53	33·95
9	17th Bengal Cavalry, Seetapore, with Detachment of 138 men at Fyzabad ...	January 1869, from Barrackpore...	461	424	1511·8	10	4	2	...	8·68	4·34
10	6th Bengal Cavalry, Cawnpore, with Detachment of 114 men at Barrackpore ...	December 1867, from Sealkote and Jhansi ...	455	346	780·0	1	13	2	...	28·57	4·40
11	10th Native Infantry, Cawnpore ...	January 1869, from Mooltan ...	686	629	1667·7	7	20	5	1	29·15	8·74
12	33rd Native Infantry, Allahabad ...	November 1870, from Morar ...	710	627	1202·5	15	3	13	1	4·23	19·72
13	11th Bengal Cavalry, Allahabad ...	December 1868, from Umballa ...	457	325	600·0	6	21	4	4	45·95	17·51
	Regiments of Behar, Benares, Oude and Cawnpore ...		7,202	6,263	1146·6	146	165	60	39	22·91	13·75

---

* The Loss by Death and Invaliding is calculated on the Total Regimental Strength, and the Admission-rate on the Average Strength present throughout the year. See introductory Note.

† For the Regiment as a body.

TROOPS, 1871.

VI.

DEATHS, and INVALIDING of each REGIMENT for the Year.

accuracy the relation to Locality of the Sickness and Mortality of Regiments).

PROPER, BHOOTAN and ASSAM.

	Total Admissions into Hospital, and Deaths in Hospital during the year.		Causes of Admissions into Hospital, and of Deaths in Hospital during the Year.																									
			Cholera.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.*	Punished.	All other Causes.
1	Admitted ...	984	2	432	36	35	14	15	...	6	...	13	5	...	35	5	155	14	...	20	...	6	34	20	27	87	...	23
	Died ...	20	2	4	...	..	...	...	...	6	...	...	...	...	2	...	2	3	...	..	..	...	...	...	...	...	...	1
2	Admitted ...	926	...	333	30	7	12	19	...	5	...	12	9	...	39	2	227	14	1	9	...	12	45	...	30	110	...	10
	Died ...	16	...	5	..	.	1	1	...	...	...	...	...	..	2	...	5	2	...	...	...	...	...	...	...	...	...	...
3	Admitted ...	148	...	66	1	5	...	1	...	...	...	1	1	...	22	...	6	...	...	2	...	3	...	...	6	25	...	4
	Died ...	...	...	...	...	...	...	...	...	...	.	...	...	..	...	..	...	...	...	...	...	...	...	..	...	...	...	...
4	Admitted ...	1,010	2	483	13	26	2	22	...	...	...	5	2	...	24	6	241	8	...	17	...	3	14	...	29	113	...	9
	Died ...	13	1	1	...	...	...	...	..	...	...	...	...	...	2	2	5	1	...	...	...	..	..	...	...	...	...	1
5	Admitted ...	1,676	2	727	17	57	...	3	...	5	...	26	16	1	114	8	287	5	...	118	6	2	71	1	45	112	...	53
	Died ...	7	2	2	...	..	..	...	...	1	...	..	..	...	...	1	1	...	..	.		..	...	.	...	...	..	...
6	Admitted ...	2,062	...	1,079	20	77	1	13	...	3	...	1	18	..	62	16	300	24	...	28		7	80	...	85	106	1	42
	Died ...	33	...	5	...	...	...	1	...	...	...	...	...	...	...	3	11	...	...	...	..	...	...	..	...	9	...	4
7	Admitted ...	1,567	1	610	70	47	7	18	...	2	...	9	25	...	38	7	203	36	11	20	1	2	21	...	122	177	...	20
	Died ...	15	...	2	...	...	...	...	...	...	...	...	...	...	3	...	1	...	...	...	..	..	..	...	..	5	...	4
8	Admitted ...	1,559	4	733	27	41	...	19	1	5	...	10	23	2	60	5	100	31	6	32	2	5	42	...	101	105	..	25
	Died ...	13	3	2	...	...	...	3	...	...	...	...	...	2	...	...	2	...	...	...	...	..	...	...	...	..	...	1
9	Admitted ...	1,146	1	476	13	37	..	7	2	4	...	8	27	2	29	6	220	10	2	13		6	57	..	94	99	...	24
	Died ...	12	1	1	...	...	...	...	..	3	...	...	..	1	...	1	2	...	...	...	..	...	..	...	.	1	...	2
10	Admitted ...	807	...	194	7	42	38	.	..	3	...	11	9	1	72	1	162	2	2	27	...	1	53	.	60	114	...	98†
	Died ...	8	...	...	...	...	1	...	...	1	...	...	...	...	...	...	4	...	...	.	...	...	..	..	...	...	...	2
11	Admitted ...	639	...	270	9	18	5	5	...	1	...	3	18	...	26	1	148	1	1	20	...	2	8	.	27	46	..	21
	Died ...	4	..	1	...	...	...	.	...	...	...	...	...	...	...	...	1	..	..	...	...	...	..	..	...	...	...	2
12	Admitted ...	374	2	170	17	18	...	1	..	4	...	1	11	...	6	2	48	...	..	1	...	1	5	..	31	41	...	12
	Died ...	6	1	1	..	...	...	1	..	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1
	Admitted ...	12,902	14	5,612	200	410	79	123	3	38	..	100	164	6	527	59	2,295	145	23	307	9	50	430	21	657	1,318	1	341
	Died ...	147	10	24	.	...	2	6	...	11	...	...	..	3	9	8	35	6	..	...	...	...	...	.	..	15	...	18
	OUDE and CAWNPORE.																											
1	Admitted ...	175	...	65	5	14	...	3	...	..	1	..	6	...	8	..	11	..	1	5	1	...	2	...	15	31	...	7
	Died ...	2	...	...	...	...	..	1	...	.	...	...	...	...	...	...	...	...	..	...	..	...	...	...	...	...	...	1
2	Admitted ...	164	...	91	13	3	...	...	...	...	...	...	2	...	3	...	15	...	...	2	...	...	2	...	10	18	...	5
	Died ...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	..	...	...	...	...	.	...	...
3	Admitted ..	651	2	316	43	38	...	11	1	8	...	3	6	1	11	4	51	14	...	14	2	2	8	5	26	66	...	19
	Died ...	3	1	...	...	...	...	...	...	1	...	..	...	...	..	...	1	...	...	...	..	...	...	...	...	...	...	...
4	Admitted ...	1,094	...	671	34	34	...	18	1	7	...	2	50	...	36	1	44	11	2	11	1	1	25	...	57	66	...	22
	Died ...	9	...	...	...	...	...	...	...	3	...	...	...	...	...	1	2	1	...	...	...	...	...	...	...	...	...	2
5	Admitted ...	307	...	130	19	9	...	1	1	3	...	4	11	...	8	4	37	3	2	11	1	3	9	...	17	10	...	24
	Died ...	5	...	1	..	..	...	..	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
6	Admitted ...	344	2	137	9	23	...	1	...	...	...	1	21	...	8	1	14	...	1	8	...	2	10	3	43	51	...	9
	Died ...	1	...	...	...	.	...	...	...	...	...	...	...	..	...	...	...		1	...	..	...	...	...	...	...	...	...
7	Admitted ...	941	3	350	13	76	2	6	...	...	...	4	22	1	22	3	107	6	...	20	...	7	25	...	74	169	...	31
	Died ...	5	2	...	...	...	...	...	..	...	...	...	..	...	...	...	1	1	...	...	...	...	..	...	...	...	...	1
8	Admitted ...	593	...	312	9	20	...	...	...	2	...	2	12	...	13	4	52	4	...	4	1	2	23	2	94	10	...	27
	Died ...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	3	4	1	...	..	...	...	...	...	...	1	...	...
9	Admitted ...	641	...	129	17	59	18	2	...	1	...	13	29	..	44	2	48	1	2	54	2	4	11	...	93	85	...	27
	Died ...	2	...	1	...	...	...	...	...	...	...	...	...	...	..	...	1	...	...	...	...	...	...	...	...	...	.	...
10	Admitted ...	273	...	132	13	8	...	...	.	...	1	1	4	...	1	...	18	4	...	7	...	1	10	1	26	42	...	4
	Died ...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	..	...	...	...	...	...	...	...
11	Admitted ...	1,040	...	577	22	19	...	5	...	7	...	6	13	1	64	5	68	14	1	18	...	2	30	1	93	82	...	21
	Died ...	5	...	...	...	...	...	...	1	3	...	...	...	...	...	1	...	...	...	...	...	...	...	..	...	...	...	...
12	Admitted ...	754	1	291	8	33	5	22	...	...	1	6	15	1	33	4	62	5	...	11	1	5	34	...	98	92	...	26
	Died ...	13	1	2	...	...	...	...	...	...	1	...	...	.	3	1	4	...	...	...	1	...	...	...	...	...	...	...
13	Admitted ...	195	...	89	5	14	...	...	...	...	...	1	3	...	4	2	14	2	...	6	...	...	5	...	12	34	...	4
	Died ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	..	...	...	...	...	...	1
	Admitted ...	7,181	8	3,290	210	350	25	69	3	28	3	43	194	4	255	30	541	64	9	171	9	29	194	12	658	756	...	226
	Died ...	60	4	6	...	...	...	...	1	9	2	...	...	...	3	8	14	5	2	...	1	...	...	...	...	1	...	4

* Including cases of Foot-sore.

† 60 Goitre.

TABLE

3.—*REGIMENTS of ROHILCUND*

	REGIMENT AND STATION OF 1871.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH		Admission-rate of 1871 per 1,000 of the Average Strength.	INVALIDED.		DIED.		LOSS PER 1,000.	
			Number borne on the Rolls.	Average Strength present during 1871.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	16th Native Infantry, Wing, Shahjehanpore ...	December 1868, from Fyzabad ...	722	306	606·5	6	3	8	2	4·16	6·93
2	16th Native Infantry, Head Quarters, Moradabad	January 1869, from Fyzabad ...		337	626·1						
3	2nd Bengal Cavalry, Bareilly, with Detachment of 60 men at Moradabad ...	February 1870, from Deolee and Jhansi ..	454	395	483·5	6	7	4	1	15·42	11·01
4	27th Native Infantry, Bareilly ...	March 1868, from Peshawur ...	697	620	737·1	...	4	5	...	5·74	7·17
5	3rd Goorkhas, Almorah, with Detachments at Petoraghur and Nynee Tal ...	April 1866, from Bhootan ...	689	640	956·3	11	5	10	2	7·26	17·42
6	2nd Goorkhas, Deyrah ...	January 1869, from Rawulpindee...	713	609	1110·0	5	9	13	2	12·62	21·04
7	32nd Native Infantry, Raneekhet ..	December 1869, from Dinapore ...	701	650	730·8	8	1	11	1	1·43	17·12
8	Sappers and Miners, Roorkee, with Detachments at Chuckrata, Rawulpindee, and Peshawur ...	......	1,151	1,041	900·4	13	22	16	7	19·11	19·98
9	8th Bengal Cavalry, Meerut, with Detachment of 60 men at Delhi ...	February 1870, from Segowlie ...	459	412	770·1	5	16	5	1	34·86	13·07
10	3rd Native Infantry, Meerut ...	March 1870, from Peshawur ...	712	657	1525·1	10	33	11	1	46·35	16·85
11	17th Native Infantry, Delhi ...	November 1867, from Barrackpore	706	630	1577·8	32	27	13	5	38·24	25·50
	REGIMENTS OF ROHILCUND AND MEERUT ...		7,001	6,297	972·7	96	127	91	22	18·13	16·13

4.—*REGIMENTS of AGRA*

	REGIMENT AND STATION OF 1871.	Date of Arrival from Station previously occupied.	Number borne on the Rolls.	Average Strength present during 1871.	Admission-rate of 1871 per 1,000 of the Average Strength.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	1st Native Infantry, Agra, with Detachment of 176 men at Futtehghur for 5 months, and of 176 men at Ulwar from August ...	November 1868, from Dum-Dum ...	706	653	1773·4	10	32	9	1	45·33	14·16
2	40th Native Infantry, Agra, with Detachment of 176 men at Futtehghur for 7 months ...	February 1869, from Banda and Nowgong ...	703	665	1351·9	26	5	11	1	7·11	17·07
3	1st Bengal Cavalry, Morar ...	December 1867, from Nowgong ...	458	392	1441·3	5	19	1	3	41·48	8·73
4	6th Native Infantry, Morar ...	January 1870, from Julpigoree ...	672	601	2003·3	17	36	4	2	53·57	8·93
5	34th Native Infantry, Morar ...	November 1870, from Lucknow ...	709	628	3014·6	29	4	5	1	5·64	8·46
6	39th Native Infantry, Jhansi, with Detachment of 73 men at Lullutpore	December 1869, from Lucknow ...	670	594	1016·8	1	13	10	...	19·40	14·93
7	7th Bengal Cavalry, Nowgong, with Detachment of 110 men at Nagode ...	December 1867, from Lucknow ...	443	372	2419·4	12	5	3	1	11·20	9·03
8	14th Bengal Cavalry, Deolee, with Detachments at Jhansi and Sambhur ...	December 1869, from Meerut ...	463	349	1147·0	9	10	4	1	21·60	10·80
	REGIMENTS OF AGRA AND CENTRAL INDIA ...		4,824	4,254	1061·0	109	124	47	10	25·70	11·82

5.—*REGIMENTS of*

	REGIMENT AND STATION OF 1871.	Date of Arrival from Station previously occupied.	Number borne on the Rolls.	Average Strength present during 1871.	Admission-rate of 1871 per 1,000 of the Average Strength.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	12th Bengal Cavalry, Umballa, with Detachment of 60 men at Jullundur ...	December 1868, from Abyssinia ...	463	385	826·0	6	26	4	...	56·16	8·64
2	26th Native Infantry, Umballa ...	January 1869, from Mehidpore and Augur ...	699	617	1372·8	5	8	8	3	11·44	15·74
3	14th Native Infantry, Jullundur, with Detachments of 37 men at Phillour and Loodianah	January 1870, from Fort William	692	644	1114·9	3	9	13	2	13·01	21·68
4	28th Native Infantry, Ferozepore ...	February 1870, from Peshawur ...	707	621	713·4	2	5	6	...	7·07	8·49
5	19th Bengal Cavalry, Mooltan ...	March 1870, from Peshawur ...	461	384	635·4	2	31	4	1	67·24	10·85
6	45th Native Infantry, Mooltan ...	December 1868, from Peshawur ...	695	611	613·7	7	65	4	4	93·52	11·51
7	10th Bengal Cavalry, Sealkote ...	January 1869, from Abyssinia ...	449	378	1031·4	9	37	1	...	82·41	2·23
8	12th Native Infantry, Sealkote ...	February 1869, from Jubbulpore...	712	623	516·0	4	22	1	4	30·90	7·02
9	1st Goorkhas, Dhurmsalla, with Detachment of 170 men at Simla for 8 months ...	March 1867, from Buxa ...	688	619	1258·5	4	43	8	3	62·50	15·99
10	4th Goorkhas, Bukloh ...	April 1866, from Almorah ...	714	587	1403·7	7	1	18	3	1·40	29·41
11	18th Bengal Cavalry, Meean Meer ...	November 1870, from Peshawur ...	430	343	1090·4	15	7	8	1	16·28	20·93
12	24th Native Infantry, Meean Meer, with Detachment at Umritsur for 9 months ...	November 1870, from Rawulpindee	698	630	1361·9	13	13	3	6	18·62	12·89
13	35th Native Infantry, Meean Meer, with Detachment of 147 men at Umritsur for 4 months	March 1869, from Saugor ...	692	654	1128·4	4	27	32*	...	39·02	46·24
14	3rd Bengal Cavalry, Jhelum ...	December 1868, from Peshawur ...	459	400	617·5	10	10	2	6	21·78	17·43
15	20th Native Infantry, Jhelum, with Detachment of 160 men at Attock ...	March 1869, from Shahjehanpore and Moradabad ...	688	614	928·3	8	8	1	2	11·63	4·36
16	30th Native Infantry, Jhelum, with Detachment at Murree ...	December 1868, from Cawnpore ...	701	623	744·8	6	15	5	2	21·40	9·99

---

* This Regiment, which lost 50 men in 1870 and

† All of these cases occurred in Eastern Bengal towards the close

XVI,—(*continued*).

and MEERUT.

	Total Admissions into Hospital, and Deaths in Hospital during the Year.		Causes of Admissions into Hospital and of Deaths in Hospital during the Year.																								
			Cholera.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
1	Admitted ...	155	...	81	2	7	...	...	...	3	...			2	2	...	10	...	1	6		2	3		20	8		5
	Died ...	1	...	...	...			...	...	1																		
2	Admitted ...	211	...	114	4	6	...	2				1	3	...	5	3	18	...	...		1	4	3		23	23	...	1
	Died ...	2	...	2																								
3	Admitted ...	101	...	17	1	4		2		2	...	2	17	...	3	5	5	...		...		1	1	1	37	59		1
	Died ...	4	...	...						1						1										2		
4	Admitted ...	457	1	189	15	15	...	...	...		...	3	10		17	3	96	1		4	5		20	1	34	39		4
	Died ...	5	1	2													1											1
5	Admitted ...	612	1	224	44	56	4	1	...	4	...	1	13		26	3	30	4	1	23	1	12	7		54	92		11
	Died ...	10	1	1	...		1	...	...	3				1	1	1			1									
6	Admitted ...	676	3†	314	33	13			...	6	...	1	42		7	2	49	15	7	7	2	6	3		34	99		3
	Died ...	13	2	1	...					4					1			2	1							2		
7	Admitted ...	475	...	147	19	27	...	...	...	...			20	1	21	3	65		...	11		...	16		7	123		12
	Died ...	11	...	1	...										1	3	4									1		1
8	Admitted ...	1,031	1	428	82	40	1	22	1	6		10	15	1	46	11	153	7	...	21	3	5	22	1	78	107		20
	Died ...	16	...	3	...					1				1	3	2	3				1							2
9	Admitted ...	321	...	184	8	14	...				...	2	12		4	6	21	3		5				3	18	35		6
	Died ...	5	...	2										1		1	1											
10	Admitted ...	1,002	1	576	16	39	...	13		1	1	2	12		14	11	73	1	2	16		6	17	...	75	18		48
	Died ...	11	1	3							1				3		3											
11	Admitted ...	994	2	722	5	16	...	4	...	2	...	3	5		12	3	50	1	1	17			11		68	61		10
	Died ...	13	1	7											3				1							1		
	Admitted ...	6,125	9	3,059	182	237	5	44	1	24	1	25	149	4	157	50	570	32	12	113	12	36	103	6	446	697		121
	Died ...	91	6	22	...		1		...	10	1	...		3	12	8	12	2	3		1					6		4
	and CENTRAL INDIA.																											
1	Admitted ...	1,158	...	521	52	93	...	13	2	2		5	8		33	11	25	7	2	15		9	18	1	107	203		31
	Died ...	9	...	4			...	1	1	1						1												1
2	Admitted ...	809	...	581	19	27	...		...	...		3	22		5	1	33			6	...		7		113	79		3
	Died ...	11	...	2	...										2	2	2									2		1
3	Admitted ...	565	...	243	12	37	1		...	...		3	22		7	5	17			13			12	3	71	113		6
	Died ...	1																								1		
4	Admitted ...	1,709	...	1,330	53	10		20		5			12	...	58	2	30	1	1	14		6	52	6	75	106	1	8
	Died ...	4	...	1						1							1											1
5	Admitted ...	1,912	...	1,538	23	16	2	2				16	13		26	2	80	13		2		7	11		56	94		11
	Died ...	5		3											1		1											
6	Admitted ...	604		395	21	17	...	2		...		1	22	...	8	2	30	3		2		5	3		54	30		9
	Died ...	10		4	...										1		2									2		1
7	Admitted ...	900	...	505	8	45	1	1		...		5	18	1	13	3	31	7		18	2	9	10	1	99	113	1	9
	Died ...	3	...	1	...	1											1											
8	Admitted ...	505	...	316	16	16	...	...		...	1	2	1		12	2	19	4		7		2	12	3	54	31	...	4
	Died ...	4	...	1											1		1											1
	Admitted ...	8,342	...	5,429	204	270	4	38	2	7	1	35	118	1	162	28	265	35	3	77	2	38	125	11	629	772	2	81
	Died ...	47		16		1		1	1	2					5	3	8									5		5
	the PUNJAB.																											
1	Admitted ...	818	...	156	6	14		2	...	...		2	16	...	11	1	18	1	1	11		1	3		25	14		5
	Died ...	4		1											2													1
2	Admitted ...	847		405	19	15	1	21			...	5	20	1	35	5	51	3		16	1	3	17		64	159		6
	Died ...	8													3	2	1											2
3	Admitted ...	718	...	364	15	13	2	41		2		1	13		21	13	32	30	5	1		1	38	5	71	32		12
	Died ...	13		2		1		2		4	...	...				1	1	2										
4	Admitted ...	443	...	103	17	10		3		2	1	3	27	...	13	14	19	2	1	4		3	29	2	165	13		3
	Died ...	6		2							1					2										1		
5	Admitted ...	244	...	73	2	6	...	...		1		1	7	...	13	6	20	1		6	1		1	1	46	58	...	1
	Died ...	4		...											1		1									1		1
6	Admitted ...	375		127	8	13		1	...			...	10		47	17	21	2	...	9	1		15	1	56	35		12
	Died ...	4													1	2												1
7	Admitted ...	301	...	141	5	6	1	41		...		1	23	...	7	1	32	1		10			6	1	51	51		6
	Died ...	1	...	1																								
8	Admitted ...	322		161	5	11	...	1	...			7	17		8	...	13	...		1		1	6		30	44		11
	Died ...	1	...	...																								1
9	Admitted ...	779	...	392	40	34	2	5		2		1	18		9	6	28	2	1	20		9	4		71	126	...	9
	Died ...	8		2				1							1	1	1		1									1
10	Admitted ...	824	17†	232	10	14	...	2		1		4	8	1	21	1	69	11	1	21	1	2	6		35	311		24
	Died ...	18	12	1				1		1	1			1														1
11	Admitted ...	374	...	107	8	5	...	19	1	1	...	6	10		15	12	6	5		3	3	2	4	6	60	93		8
	Died ...	8	...	1											1	6												
12	Admitted ...	858		298	18	90		3		2	...	3	23		41	7	88	3	3	32		1	49		142	40		15
	Died ...	3													1		1		1									
13	Admitted ...	738		263	5	18	1	1		2		6	18		59	82	99	1		5			5		130	39	...	4
	Died ...	32	...	2		1	...	...		1					6	16	4									2		
14	Admitted ...	247		93	5	8	...	...				3	8		8	4	12			5	1		4	...	46	36		14
	Died ...	2		1	...									1														
15	Admitted ...	570	...	252	29	23	...	2				8	10		7	9	71	1	1	8	3	...	19		76	28		14
	Died ...	1	...													1												
16	Admitted ...	464	...	206	10	19	...	17		...	1	8	12		15	10	37	4	...	10	2	6	11		46	27		14
	Died ...	5	...					1		...						2	2											

32 in 1871, returns no absent death in either year.
of the year, after the Regiment joined the Loshale Field Force.

TABLE

REGIMENTS *of*

	REGIMENT AND STATION OF 1871.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH.		Admission-rate of 1871 per 1,000 of the Average Strength.	INVALIDED.		DIED.		LOSS PER 1,000.	
			Number borne on the Rolls.	Average Strength present during 1871.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
17	9th Bengal Cavalry, Rawulpindee ...	November 1870, from Meean Meer	447	378	801·6	20	8	11	...	17·90	24·61
18	23rd Native Infantry, Rawulpindee, (at Huzara from May to September)	August 1868, from Abyssinia	700	635	546·5	11	17	8	2	24·29	14·29
19	25th Native Infantry, Rawulpindee ..	November 1870, from Peshawur	676	599	830·4	33	11	22	6	16·27	41·42
20	20th Native Infantry, Tallagunge	February 1869, from Meean Meer	712	614	998·4	16	14	7	1	19·66	11·24
21	5th Bengal Cavalry, Nowshera* ...	December 1868, from Seetapore ...	455	391	2007·6	4	14	6	1	30·77	15·38
22	31st Native Infantry, Nowshera* ..	November 1868, from Umballa ...	706	590	1184·7	5	...	6	3	...	12·75
23	15th Bengal Cavalry, Peshawur* ...	December 1869, from Mooltan ...	461	307	1105·8	17	13	5	1	28·20	13·02
24	16th Bengal Cavalry, Peshawur* ..	October 1870, from Rawulpindee...	457	411	946·5	2	14	6	1	30·63	15·32
25	15th Native Infantry, Peshawur*	December 1869, from Ferozepore	661	601	1797·0	20	14	16	11	21·18	40·85
26	19th Native Infantry, Peshawur* ...	November 1868, from Allyghur ...	676	605	1170·2	15	11	19	3	16·27	32·54
27	21st Native Infantry, Peshawur* ...	November 1870, from Meean Meer	651	596	1468·1	30	...	16	3	...	29·19
28	30th Native Infantry, Peshawur* ...	December 1869, from Meerut ...	667	572	1424·8	16	7	8	2	10·50	14·99
	REGIMENTS OF THE PUNJAB ...		17,217	15,125	1062·6	208	450	248	71	26·14	18·53
	REGULAR NATIVE ARMY OF THE PRESIDENCY ...		44,477	39,626	1279·8	874	1,040	593	201	23·38	17·85

6.—*REGIMENTS of*

1	Guide Corps, Murdan ..	Stationary ..	1,103	842	1293·3	10	29	6	5	26·29	9·97
2	Peshawur Mountain Train, Abbottabad ..	April 1871, from Kohat ..	160	144	2048·6	3	4	1	.	25·00	6·25
3	3rd Punjab Infantry, Abbottabad and Huzara District ..	December 1868, from Kohat ...	722	610	1380·3	40	24	5	14	33·24	26·32
4	5th Goorkhas, Abbottabad	Stationary ...	751	638	1479·6	1	19	9	4	25·30	17·31
5	Huzara Mountain Train, Kohat	March 1871, from Abbottabad ...	175	138	2239·1	1	1	1	1	5·71	11·43
6	4 Garrison Company, Kohat ..	Stationary ...	74	61	1262·3	4	4	3	3	54·05	81·08
7	4th Punjab Cavalry, Kohat ..	March 1869, from Bunnoo ...	486	381	1480·3	42	18	5	7	37·04	24·70
8	1st Punjab Infantry, Kohat ..	December 1868, from Dera Ismael Khan ..	747	615	1819·5	14	13	8	1	17·40	12·05
9	2nd Punjab Infantry, Kohat	November 1868, from Abbottabad	697	616	1987·0	40	17	12	5	24·39	24·39
10	4th Punjab Infantry, Kohat ..	February 1869, from Dera Ismael Khan ...	736	614	2345·3	29	20	25	2	27·17	36·68
11	2 Field Battery, Bunnoo, (Edwardesabad) ...	December 1868, from Kohat ..	107	86	2407·0	4	1	1	...	9·35	9·35
12	1st Punjab Cavalry, Bunnoo ...	February 1869, from Dera Ismael Khan ..	465	366	1740·4	10	15	4	5	32·26	19·36
13	2nd Sikhs, Bunnoo ..	January 1869, from Dera Ghazee Khan .	729	586	1851·5	29	9	18	4	12·35	30·18
14	4th Sikhs, Bunnoo ...	February 1869, from Dera Ghazee Khan ...	737	616	2115·3	20	8	19	3	10·85	29·85
15	5th Punjab Cavalry, Dera Ghazee Khan ...	February 1869, from Rajanpore ...	494	379	1918·2	11	12	5	2	24·29	14·17
16	3rd Sikhs, Dera Ghazee Khan	December 1868, from Peshawur ...	745	611	1687·6	24	6	15	4	8·05	25·50
17	6th Punjab Infantry, Dera Ghazee Khan, with Detachment of 127 men at Rajanpore ...	January 1869, from Kohat ..	752	618	[illegible]	25	11	18	2	14·65	26·59
18	3 Field Battery, Dera Ismael Khan ..	January 1869, from Bunnoo ...	105	79	1202·5	3	2	...	...	19·05	...
19	2nd Punjab Cavalry, Dera Ismael Khan ...	February 1869, from Dera Ghazee Khan ...	488	376	1290·0	6	12	6	4	24·59	20·49
20	1st Sikhs, Dera Ismael Khan ...	November 1868, from Kohat ...	738	639	1125·2	6	23	11	2	31·17	17·62

* These Regiments furnished Detachment

the PUNJAB,—(continued).

CAUSES OF ADMISSIONS INTO HOSPITAL AND OF DEATHS IN HOSPITAL DURING THE YEAR.

	Total Admissions into Hospital, and Deaths in Hospital during the year.		Cholera.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
17	Admitted	... 303	...	142	5	9	3	1	1	.	...	1	7	...	...	4	14	1	...	2	1	...	5	1	37	62	...	7
	Died	... 11	.	3	...	...	...	..	...	...	...	...	...	..	...	6		.		.	1	.	...	...		1	...	..
18	Admitted	... 347	1	130	21	13	1	...	...	...	...	6	15	...	14	10	27	.	..	12	..	..	9	..	13	72	...	4
	Died	... 8	1	...	...	...	.		...	...	...	...	..	...	...	5	1	..		.	...		...		..	.	.	1
19	Admitted	... 501	..	209	8	50	2	10	...		...	3	9	.	16	12	46	2	1	8	.	3	16	.	51	47		8
	Died	... 22	...	6	.	1	...	1	...	.	...	.	...	...	...	9	3	..	.		..	...	...	.		..	...	2
20	Admitted	... 613	...	276	13	50	3	14	1	3	1	1	15	1	36	6	38	6	...	16	...	...	12	10	53	44		15
	Died	... 7	...	2	...	..	...	...	...	...	1	...	...	...	1	2	..	...	...	.	...	...	...	..	..	1	...	...
21	Admitted	... 791	..	395	10	31	...	3	...	...	...	...	11	.	20	3	102	5	4	12	...	..	8	.	89	94	..	4
	Died	... 6	...	3	...	...	...	..	...	...	...	.	.	..	2		..	.	...		..	..	...	.	...	1	...	...
22	Admitted	... 690	...	396	9	8	2	11	...	1	.	3	10	.	25	11	65		1	26	...	...	3	1	40	77	.	7
	Died	. 6	...	...	..	...	..	..	.	1	..	..	..		1	4			...	...	..	.	.	..		...	..	...
23	Admitted	... 439	..	206	7	18	...	..	1	...	...	3	21	...	16	11	47	12		4	1	3	4	...	32	42	...	8
	Died	... 5	...	...	.	.	.		..	...	..	...	.		...	4	.		..	...	1	..	..		.	.	..	..
24	Admitted	... 380	...	197	8	3	2	17	...	..	..	1	10	...	8	18	18	1	...	11	.	2	4	3	31	52	.	3
	Died	.. 6	...	...	...	...		2	.	...		.	..	..	...	2	1			.		...	..	..		1		
25	Admitted	... 1,080	1	544	10	34	..	25	..	2	1	9	12	.	17	30	105	31		28	.	1	14	1	104	99	..	12
	Died	... 16	..	1	..	...	...	.	..	1			..	...	.	6	3	1				.	.			4		...
26	Admitted	... 708	...	324	7	16	1	12	...	2		12	10	.	11	21	101	20	.	37		2	8	.	54	57	...	13
	Died	... 19	...	5	...	...	..		..	..	..	...	.	.	1	9	1	1		.		.	...	..		...	.	2
27	Admitted	... 875	...	541	19	24	.	20	...	..		..	25		12	6	60	10	.	7	1	3	12		88	30	...	17
	Died	... 16	..	7	..		.	1	.		..	..			1	1	3	.				.			.	1	...	2
28	Admitted	.. 815	..	411	12	39	2	21	...	..	.	12	8	.	16	13	92	32	1	12	..	...	14	3	69	47	.	11
	Died	... 8	.	3	...		..	1	..	...	...	..	...			1	2	..		..	...	..	...	.	..		..	1
	Admitted	... 16,072	19	7,147	331	633	23	296	1	21	4	109	402	3	521	336	1,331	187	20	350	19	60	326	35	1,775	1,860		270
	Died	... 248	13	13	...	3	...	10	...	8	3	.	.	2	22	82	25	1	2	.	2	...	..	..	...	13	...	16
	Admitted	... 50,712	50	24,537	1187	1900	136	570	13	118	9	312	1027	18	1652	503	5,002	463	67	1,018	51	203	1,178	88	4,165	5,403	3	1,039
	Died	... 593	33	111	...	4	3	17	2	40	6			8	51	109	94	17	7	.	1	...	...	.	..	40	,	47

the PUNJAB FRONTIER FORCE.

	Total Admissions into Hospital, and Deaths in Hospital during the year.		Cholera.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
1	Admitted	... 1,089	1	400	24	28	1	21	..		.	11	45	.	19	24	79	6	3	33	1	...	26	..	99	212	.	17
	Died	... 6	...	.	.	...	...	.	.				.			3	1	...	..	...	.	.	..		..	1		1
2	Admitted	... 295	..	117	2	10	.			..	.	2	7	.	16	6	38	3		9	1	1	8	.	35	37		3
	Died	... 1	...	1			.			.	.	.	.		.		...	..	..	..	...	.	...		...	.	...	..
3	Admitted	... 842	.	517	17	11	4	1	..		..	13	9	..	28	4	77			33	1	1	24	2	24	47		26
	Died	.. 5		4				...		.			..			...	...				..		...		...	1		.
4	Admitted	... 944	...	546	18	26	...	2	1	6	1	6	12	..	26	11	41	5	...	14	1	1	15	.	69	106	13	24
	Died	.. 9	..	1			...		1	3		.	..		1	1	1			...		..	..	.	.		.	1
5	Admitted	... 309	...	157	2	4	..	4	...	.	.	1	3	1	4	1	30	2	...	12	.	1	3	..	27	52		2
	Died	.. 1	.	.		.	...	..	.				.	.	...	...	1			..	..	..		.	...	..	...	
6	Admitted	... 77	..	36	1	1	..	5	...	1	..		3	.	1	2	7	.	..	.	.	..	..		9	5		6
	Died	... 3	.	1	..			.	..	...	.	.	.	.	1	1	..			..	...		..		..	.		..
7	Admitted	... 564	...	226	10	17	...	7	...	2	..	2	10		23	11	43	3	...	10	2	...	1	1	92	101	...	3
	Died	... 5	.	2	.				...	..	.					2					1	.	..					
8	Admitted	... 1,119	...	613	15	16	.	8	..	..	..	7	15	...	38	16	137	4	1	18	..	..	9	1	112	59		20
	Died	. 8	...	4	.		.			.	...					4				..	...				..			...
9	Admitted	... 1,224	...	770	13	13		16	.			.	21		20	18	104	18	..	3	.	2	17	1	72	117		19
	Died	.. 12	..	5	.	.		1		.		.		.		2	1	1	.					.	.			2
10	Admitted	... 1,440	..	757	37	52	1	7	...	.	1	12	13	1	38	51	130	7	.	45	6	1	20	14	158	64	..	25
	Died	... 25	..	4	..	.	...	..		.	..			1	1	16	2	.		...	1	..	...		.			.
11	Admitted	... 207	...	113	2	7	...	..		.	...	1	3		4	..	20	1		5	1			1	21	20	.	5
	Died	... 1	..	..	..	.		.			.	.				.				..		.	...	..				1
12	Admitted	... 637	...	302	9	12	1	7	...	..	2	5	8		17	11	52	17	3	27	..	..	6	8	73	69	.	8
	Died	... 4	..	1	..	...	...	..	..	.	1	...		...		2	...			...	...			.	...	...		.
13	Admitted	.. 1,085	.	517	13	33	4	3		1	.	11	8	1	19	25	122	10	1	17	3	2	21	3	94	73		44
	Died	. 18	...	3	.		1		..		..			.	3	8		..	1	..		...			.	1		1
14	Admitted	.. 1,303	1	744	10	34	.	16	...	8		9	14	...	35	23	116	10	1	19	3	3	10	2	131	48		27
	Died	... 19	...	6	.	.	..	3	..	2	..	.		..		3	4	.		..	..	..		.	.	..	..	1
15	Admitted	.. 727	...	333	7	2	1	12	...	..	1	10	13	...	15	13	20	11	.	5		2	17	2	96	151		16
	Died	.. 5	..	...	.	.	..	.	..	..	..	...	..	...		4	1		.	..	.	..	.	...		.	.	.
16	Admitted	... 970	...	522	12	35	1	11	..	...	..	7	11	1	13	9	58	7	..	30	..	7	9	2	109	81		9
	Died	.. 15	.	5	.		...	1	..		..			1	4	3	1		...	.		.	...	...	...	..		..
17	Admitted	... 824	...	438	12	33	1	...	.	1	1	16	16	2	30	16	77	7	3	17	...	2	14	4	80	32		13
	Died	... 18		5	.	1	..		.	.	1		..	1	3	5	1	..		...	.		...	..	...	..	..	1
18	Admitted	... 95	...	32	2	2	..	.	...	.	.	...	6	...	2	1	15	...	...	1	..		...	1	12	18	.	3
	Died	... ...	..	...	..	...	.				..	..			..		...			..		..	..	..	...	...		..
19	Admitted	... 485	...	200	7	21	.	1		...	...	4	10	..	4	2	34	11	..	8	1	...	20	19	76	59		8
	Died	... 6	..	3	.		..	.		.	..	...	...	.	1	1	...			...	.	.	...		..	1	.	
20	Admitted	... 719	1	313	11	23	1	4	1	..	.	7	10	...	7	9	130	2	...	14	1	1	14	1	121	38	.	10
	Died	... 11	1	3	.	...	..	..	1		2	..	...	...	1	...	2	.	.	..	..	..	...		..	...	..	1

to the Frontier Out-posts during the year.

6—*REGIMENTS of the*

	REGIMENT AND STATION OF 1871.	Date of Arrival from Station previously occupied.	Regimental Strength. Number borne on the Rolls.	Regimental Strength. Average Strength present during 1871.	Admission-rate of 1871 per 1,000 of the Average Strength.	Invalided. To their homes for change of air.	Invalided. For Discharge.	Died. With the Regiment.	Died. Absent from the Regiment.	Loss per 1,000. By Invaliding for Discharge.	Loss per 1,000. By Deaths.
21	5th Punjab Infantry, Dera Ismael Khan ...	January 1869, from Bunnoo ...	748	628	1235·7	11	5	6	3	6·68	12·03
22	3rd Punjab Cavalry, Rajanpore ...	January 1869, from Kohat ..	480	373	2769·4	16	7	3	2	14·58	10·42
	REGIMENTS OF THE PUNJAB FRONTIER FORCE ...		12,230	10,016	1673·7	358	260	181	73	21·24	20·75

7—*REGIMENTS of the CENTRAL*

1	1st Central India Horse, Augur† ...	493	316	259·5	1	4	2	2	8·11	8·11
2	2nd Central India Horse, Goonah† ..	404	332	852·4	4	4	2	1	8·09	6·07
3	Malwa Bheel Corps, Sirdarpore† ..	552	369	834·7	4	...	11	6	...	30·80
4	Meywar Bheel Corps, Kherwarrah ...	706	553	1294·7	1	13	10	...	18·41	14·16
5	Mairwarra Battalion, Ajmere (incorporated in May 1872) ...	683	715	1118·9*	...	...	12*	1	...	19·03*
6	Bhopal Battalion, Sehore ..	923	821	1179·0	21	20	6	5	21·67	11·92
7	Erinpoorah Irregular Force ...	875	752	478·7	6	7	13	...	8·00	14·86
8	Deolee Irregular Force† ...	877	877	1101·6	12	...	11	...	...	12·54
	REGIMENTS OF THE CENTRAL INDIA IRREGULAR FORCE ...	5,663	4,735	963·5	48	48	67	15	8·57	14·63

---

* Including the Admissions and Deaths of the first months of the

† These Corps were broken up into many

STATEMENT SHOWING THE GAIN AND LOSS IN STRENGTH

Present with their Regiments on 1st January 1871	43,618
At their homes on Furlough	485
At their homes on Sick Leave	332
Remaining sick in the Hospitals of other Regiments	42
Total Strength on 1st January 1871 ...	44,477

ADDITIONS OF THE YEAR.

Transfers received from other Regiments	26
Recruits received during the year	4,250
Deserters rejoined	8
Total Gain ...	4,284

ANNUAL RELIEF OF THE

CAVALRY REGIMENTS.

1st Bengal Cavalry	From Morar	To Cawnpore and Barrackpore	... Arrived	February	1872.
3rd Bengal Cavalry	" Jhelum	" Nowgong and Nagode	... Arrived	March	1872.
5th Bengal Cavalry	" Nowshera	" Jhelum	... Arrived	December	1871.
6th Bengal Cavalry	" Cawnpore	" Morar	... Arrived	February	1872.
7th Bengal Cavalry	" Nowgong and Nagode	" Seetapore and Fyzabad . .	... Arrived	April	1872.
10th Bengal Cavalry	" Sealkote	" Nowshera	... Arrived	November	1871.
17th Bengal Cavalry	" Seetapore	" Sealkote	... Arrived	March	1872.

INFANTRY REGIMENTS.

2nd Native Infantry	From Julpigoree	To Dinapore	... Arrived	April	1872.
7th Native Infantry	" Lucknow	" Jullundur	... Arrived	March	1872.
10th Native Infantry	" Cawnpore	" Barrackpore	... Arrived	February	1872.
11th Native Infantry	" Dum-Dum	" Bareilly	... Arrived	February	1872.

PUNJAB FRONTIER FORCE,—(concluded).

	Total Admissions into Hospital, and Deaths in Hospital during the year.	Cholera.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
21	Admitted ... 776	...	350	34	13	1	7	...	..	...	5	20	...	11	14	105	2	..	25	2	2	15	8	90	63	..	9
	Died ... 6	...	1	...	...		...	...	1	...	.	...	.	...	1	1	.	..	...	...	...	.	..		..	..	2
22	Admitted ... 1,033	...	620	3	21		...	...	...	...	1	5	...	7	9	53	..	...	13	..	...	6	9	180	100		6
	Died ... 3	...	1	...	..	.	.	...	...	...	...	.	..	...	1	...	.	...	...	...	...	.	.		1	.	...
	Admitted ... 16,764	3	8,632	270	414	16	132	2	19	6	133	202	6	470	279	1,491	156	12	424	23	29	255	79	1,783	1,552	13	303
	Died ... 181	1	50	.	1	1	6	2	6	4	...	...	3	15	57	16	1	1	...	2	...	...			5	.	11

INDIA IRREGULAR FORCE.

	Total Admissions into Hospital, and Deaths in Hospital during the year.	Cholera.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Punished.	All other Causes.
1	Admitted ... 82	...	34	..	2	2	...	..	..	...	1	3	.	1		7	.	...	..	...	...		...	1	22	..	9
	Died .. 2	.	...	...	...	.	...	..	..	.	..	...	..	..	..	...	.	.	.	.	.						2
2	Admitted ... 283	1	141	11	9	...	...	..	.	..	3	13	.	1	1	19	4	4	2	.	1	3	13	15	35	...	7
	Died ... 2	...	1	..	..	...	..	...		..	...	...	...	..	...	...	...	...	...	..	..	..	...				1
3	Admitted .. 308	...	135	15	11		1	...	...	..	..	36	...	8	7	17	1	..	1	1	..	6	20	13	31	.	6
	Died ... 11	.	5	.	..	..	..		.	..	.	.	...	...	2	2	..	.	.	1		.			1		
4	Admitted .. 716	1	298	4	19		...	..	...	...	1	33	..	25	5	24	.	1	7		...	37	67	119	64		14
	Died ... 10	...	5	.	...	...	...	.			.	..	...			1	.	..	...		..					.	4
5	Admitted .. 800*	...	394	9	61	1	50	..	1	..	.	28	...	16	14	15	10	1	14	3	1	7	28	83	25	...	9
	Died .. 12	...	5			..	1		...		.	.	.	1	3	...	.	...	.	1			...		.	..	
6	Admitted ... 968	1	541	19	38		19	.	...	...	16	41	1	10	8	110	6	1	15	2	2	28	2	57	34	...	14
	Died .. 6	...	1	.	..		1	.	.	..	.			...	...	3	...			...	..						1
7	Admitted ... 360	...	154	23	11	1	7	...	...	.	.	36	...	8	14	13	1	.	5	...	2	7	9	16	51	.	2
	Died ... 13	...	2	...	..	...	..	.	..	...	...	..	.	1	3	3	...	.	...	...	...	.	...		1		3
8	Admitted ... 1,045	...	449	30	46	..	5	1	..		2	57	..	37	20	41	7	1	41	.	4	15	25	91	152		21
	Died ... 11	..	3	..	.	...	.	..	.	.	..	.		3	3	1	...	...	.		..				.		1
	Admitted ... 4,562	3	2,149	111	197	4	82	1	1	..	23	246	1	109	99	246	29	8	85	6	10	103	164	398	414	.	73
	Died ... 67	..	22	...	...	.	2	..	1	..	.	.	...	5	11	10	..	...	.	2	...	...			2		12

year, while the corps was still a Police Battalion.
Detachments during the year.

OF THE REGULAR NATIVE ARMY OF BENGAL DURING 1871.

PERMANENT LOSS OF THE YEAR.

Deaths at Head-Quarters, at Out-posts, and in Detachments	600
Deaths while on Furlough, &c.	55
Deaths while at home on Sick Leave	137
Total Deaths	792
Invalided for Discharge	1,040
Transfers given to other Regiments	21
Discharged otherwise	1,834
Deserters, struck off for bad conduct, &c....	349
Total Loss ..	4,036
Remaining on the Regimental Rolls on 31st December 1871	14,725

NATIVE ARMY, 1871-72.

INFANTRY REGIMENTS,—continued.

14th Native Infantry	From Jullundur	To Rawulpindee ...	Arrived	April	1872
16th Native Infantry	„ Shahjehanpore and Moradabad	„ Julpigoree and Dacca ..	Arrived	March	1872
17th Native Infantry	„ Delhi	„ Meean Meer and Umritsur ...	Arrived	February	1872
19th Native Infantry	„ Peshawur	„ Tallagunge .	Arrived	November	1871
20th Native Infantry	„ Tallagunge	„ Delhi	Arrived	January	1872
22nd Native Infantry	„ Dacca	„ Jhelum	Arrived	April	1872
26th Native Infantry	„ Umballa	„ Peshawur ...	Arrived	November	1871.
27th Native Infantry	„ Bareilly	„ Barrackpore .	Arrived	April	1872
30th Native Infantry	„ Jhelum	„ Nowshera ..	Arrived	October	1871
31st Native Infantry	„ Nowshera	„ Mooltan ...	Arrived	November	1871
32nd Native Infantry	„ Raneekhet	„ Umballa ...	Arrived	February	1872
35th Native Infantry	„ Meean Meer	„ Cawnpore	Arrived	February	1872
45th Native Infantry	„ Mooltan	„ Moradabad and Shahjehanpore	Arrived	February	1872.

NATIVE TROOPS, 1871.

XVII.

TABLE showing the SICKNESS and MORTALITY among the REGIMENTS of the MADRAS NATIVE ARMY serving in Stations of the BENGAL PRESIDENCY during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

(Stations occupied—Dorundah, Nagode, Banda, Nowgong, Jubbulpore and Saugor).

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	3,672	164	44·7	1	..	...	..	...	...	...	...	...	...	...	...	..	..	...	...	..	...	1	...
February ..	3,677	150	40·8	1	..	.	.	1	..	.	...	...	.	...	...	...	...	..	...	...	..	...	...
March ...	3,622	123	34·0	3	...	...	.	1	..	.	1	...	..	...	...	...	...	..	...	1	..	...	...
April ...	3,605	117	32·5	3	...	..		1	1	..	.	..	...	..	1	.	..	...	...	...	..	...	...
May ..	3,552	92	25·9	4	..	...	...	1	..	..	...		...	.	2	...	...	...	..	.	...	...	1
June .	3,527	90	25·5	...	...	.	...	..	...	...	...	...	...	..	...	...	.	..	...	.	...	...	...
July ...	3,492	98	28·1	1	...	...	...	...	..	..	...	...	...	...	...	...	...	1	...	...	.	...	...
August .	3,476	131	37·7	1	...	...	..	.	.	..	...	...	...	.	.	..	1	..	...	...	..	...	...
September	3,490	156	44·7	2	...	...	.	1	...	..	..	...	..	..	..	.	1	...	...	..	..	...	...
October ...	3,518	164	46·6	3	...	...	...	..	...	..	...	1	...	.	...	...	1	...		..	.	1	...
November	3,538	209	59·1	5	...	...	...	1	1	..	...	...	...	...	1	...	...	..	...	...	.	...	2
December ...	3,590	157	43·7	1	..	...	...	..	1	..	..	...	...	...	...	...	...	.	...	..	.	...	...
						...	...	6	3	..	1	1	..	...	4	...	3	1	...	1	...	2	8
						Died per 1,000 of the Average Strength.																	
For the year ...	3,563	138	38·7	25	7·01	...	...	2·53		...	·28	·28	..	...	1·12	...	·84	·28	...	·28	...	·56	·84

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	..	...	...	...	...	...	..	...	...	...	...	...	...	...
Smallpox .	..	...	1	...	.	...	...	...	...	...	...	...	1	·3	...
Fever, Intermittent ...	146	124	102	137	99	64	96	152	280	522	370	107	2,289	642·4	·28
„ Remittent and Continued .	3	4	7	9	..	...	...	..	...	...	2	2	27	7·6	11·11
Apoplexy .	...	1	...	...	..	...	...	..	...	...	...	...	1	·3	...
Dysentery ...	6	4	3	7	4	3	4	10	1	2	2	5	51	14·3	1·57
Diarrhœa ..	4	5	8	6	9	4	9	8	3	3	10	7	76	21·3	
Hepatitis ..	...	..	..	..	...	...	..	.	...	..	...	...	...	...	...
Spleen Disease ..	2	1	...	..	...	1	..	...	1	1	..	...	6	1·7	...
Respiratory Diseases ..	21	15	9	12	8	8	3	7	3	7	11	12	116	32·5	3·45
Phthisis Pulmonalis ...	...	...	1	...	1	1	...	1	1	1	...	1	7	2·0	42·86
Dropsy		.	.	...	...	...	1	...	...	...	...	...	1	·3	...
Scurvy ..	..	...	..	..	..	...	...	...	..	...	...	...	...	...	...
Rheumatism ...	23	22	15	19	19	16	21	25	32	22	18	21	253	71·0	·20
Venereal Diseases	11	2	4	3	8	9	6	8	5	6	6	7	75	21·0	
Eye Diseases ..	5	6	3	21	23	32	45	49	20	13	8	4	228	64·0	
Abscess and Ulcer .	28	13	16	21	23	13	26	45	29	19	48	31	312	87·6	
Wounds and Accidents ..	33	14	14	14	24	21	24	36	17	16	24	20	266	74·7	
All other causes ...	25	22	21	27	35	27	18	42	34	21	27	38	335	94·0	
	307	232	204	276	253	190	253	383	426	633	526	352	4,044		
	Admitted per 1,000 of the Average Strength in each Month.														
	83·6	63·1	56·3	76·6	71·2	56·4	72·4	110·2	122·1	180·0	148·7	98·0	1135·0		

3. JAIL POPULATION, 1871.

JAILS OF THE BENGAL PRESIDENCY, 1871.

I.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION of the BENGAL PRESIDENCY during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths.																
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	57,510	1,691	29·4	217	3·78	1	..	11	21	3	57	20	1	..	37	3	13	1	..	28	2	19
February ..	57,371	1,552	27·0	133	2·32	2	1	3	39	2	18	15	...	2	20	2	9	3	2	3	1	11
March ...	56,542	1,425	25·2	113	2·00	2	..	3	16	3	23	9	1	1	16	1	17	...	...	10	1	10
April ..	56,580	1,396	24·7	96	1·70	7	...	1	15	...	16	7	...	1	15	2	8	5	1	2	4	12
May ..	56,718	1,375	24·2	110	1·94	3	..	2	21	2	26	6	1	2	11	1	7	4	..	7	4	13
June ..	57,628	1,375	23·9	92	1·60	6	...	2	5	9	21	3	..	2	15	1	10	...	1	7	3	7
July ..	57,716	1,546	26·8	82	1·42	3	...	2	14	1	13	7	...	1	7	..	10	3	...	5	3	13
August ..	58,022	1,820	31·4	122	2·10	1	...	7	18	2	37	15	...	5	6	...	10	1	...	7	..	13
September .	58,388	2,003	34·3	163	2·79	3	...	14	18	2	44	28	1	1	17	2	9	1	...	8	2	13
October .	58,186	2,175	37·4	262	4·50	16	...	12	11	4	108	44	2	4	23	2	9	6	...	6	4	11
November ..	58,165	2,125	36·5	266	4·57	8	...	4	12	1	113	45	1	4	28	1	11	6	...	11	6	15
December ...	57,598	1,809	31·4	330	5·73	11	1	7	14	2	130	40	3	1	59	5	13	4	..	8	5	27
						63	2	68	204	31	606	239	10	21	254	20	126	34	4	102	35	164
						Died per 1,000 of the Average Strength.																
For the year..	57,537	1,691	29·4	1,986	34·52	1·10	·03	4·73		·54	14·69		·17	·42	4·41	·35	2·19	·59	·07	1·77	·61	2·85

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March	April.	May.	June.	July.	Aug	Sept.	Oct.	Nov.	Dec.			
Cholera ..	6	12	13	20	15	11	12	5	7	27	28	12	171	3·0	36·84
Smallpox .	3	7	1	4	6	1		1	...	.	5	9	37	·7	5·41
Fever, Intermittent ...	1,290	1,090	1,303	1,432	1,520	1,561	2,291	3,235	3,251	3,383	2,645	1,624	24,628	428·0	·27
„ Remittent and Continued	35	106	83	92	75	44	87	88	113	70	69	44	966	16·8	21·12
Apoplexy	1	2	4	1	7	26	6	2	2	9	2	3	65	1·1	47·69
Dysentery .	376	254	329	303	281	332	450	658	748	671	639	499	5,540	96·3	8·71
Diarrhœa ...	209	234	328	320	320	278	401	481	458	442	389	295	4,158	72·3	
Hepatitis ...	3	4	4	1	3	1	1	4	7	3	2	5	41	·7	24·39
Spleen Disease	37	37	30	43	41	26	45	52	56	68	55	57	547	9·5	4·39
Respiratory Diseases .	222	208	162	142	139	97	97	121	107	172	226	277	1,970	34·2	12·89
Phthisis Pulmonalis	35	19	30	31	21	24	28	21	17	40	15	18	299	5·2	42·14
Dropsy ...	6	7	9	10	9	4	9	13	9	16	14	13	119	2·1	28·57
Atrophy and Anæmia	157	27	43	39	32	40	44	52	35	47	46	47	609	10·6	16·75
Scurvy	7	5	9	4	7	8	7	6	6	8	18	3	88	1·5	4·54
Rheumatism	102	78	102	94	108	93	80	81	94	99	87	87	1,105	19·2	1·55
Venereal Diseases ...	87	62	95	96	80	99	87	69	77	89	54	59	934	16·2	
Eye Diseases	30	28	57	58	80	74	79	91	56	66	51	25	695	12·1	
Abscess and Ulcer	388	364	348	332	364	502	455	458	422	384	351	322	4,690	81·5	
Wounds and Accidents .	176	175	192	191	220	190	162	159	198	182	147	131	2,126	36·9	
All other causes ..	338	302	414	430	445	412	306	389	378	352	324	334	4,574	79·5	
	3,508	3,141	3,556	3,649	3,773	3,829	4,710	5,986	6,041	6,108	5,167	3,864	53,362		
	Admitted per 1,000 of the Average Strength in each Month.														
	61·0	54·8	62·9	64·5	66·5	66·4	82·1	103·2	103·5	104·9	88·8	67·1	927·4		

JAILS OF THE BENGAL PRESIDENCY, 1871.

II.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in LOWER BENGAL and in ASSAM during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths.																
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	14,006	469	33·5	43	...	1	...	5	...	...	7	6	1	...	3	1	9			6		4
February ...	13,977	443	31·7	33	...	2	..	...	4	1	4	6			4	1	4	1		1		5
March .	13,837	451	32·6	40		2	...	1	2	..	11	5	...	1	3		8	..		6		1
April ...	13,864	473	34·1	32	...	6	...	...	3		7	2		1	3	1	3	3	...	1	..	2
May ...	14,077	476	33·8	32	..	...	...	1	1	.	14	2	1	...	3	1	5	1	..	1	1	1
June ...	14,307	503	35·2	40	...	6	...	1	2	...	9	1	...	2	4	...	6	..	...	5	1	3
July ...	14,231	572	40·2	28	...	3	..	2	4	...	3	1	..	1	3	...	5	2	.	2		2
August ..	14,208	627	44·1	36	...	1	..	2	5	1	11	2	...	1	3	.	3		.	2	...	5
September ..	14,241	645	45·3	50	...	3	.	5	2	1	11	3	1	1	7	2	6	.	..	3	.	5
October ...	14,074	718	51·0	75	...	16	.	5	3	2	23	5	2	1	10	..	4		...	1	.	3
November ..	13,864	684	49·3	76	...	3	.	1	1		34	13	1	1	4	1	5	2	...	3	1	6
December ...	13,621	619	45·4	82	...	9	..	2	1	1	32	7	1	1	14	1	5	3	.	2	1	2
						52	..	25	28	6	166	53	7	10	61	8	63	12	.	33	4	39
						Died per 1,000 of the Average Strength.																
For the year ..	14,026	557	39·7	567	40·42	3·71	...	3·78		·43	15·61		·50	·71	4·35	·57	4·49	·85	..	2·35	·29	2·78

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	6	12	12	14	11	11	10	4	7	27	9	9	132	9·4	39·39
Smallpox ...	...	...	.	...	1	1	.	...	...	.	.	.	2	·1	...
Fever, Intermittent ..	371	344	406	437	465	574	797	1,022	901	1,035	906	691	7,949	566·7	·31
,, Remittent and Continued ..	5	8	12	11	8	9	17	21	13	13	9	9	135	9·6	20·74
Apoplexy ..	...	1	..	1	..	1	.	1	1	3		1	9	·6	66·67
Dysentery ..	102	93	110	129	118	138	202	214	235	261	223	214	2,039	145·4	5·82
Diarrhœa ...	65	83	143	133	152	124	179	196	178	218	132	123	1,726	123·1	
Hepatitis ...	1	1	1	1	3	1	...	1	6	2	2	3	22	1·6	31·82
Spleen Disease ...	19	20	17	17	20	12	31	33	44	46	28	36	323	23·0	3·10
Respiratory Diseases ...	65	62	58	61	58	42	37	46	42	61	58	51	631	45·0	9·67
Phthisis Pulmonalis ...	11	11	20	14	12	16	14	13	12	24	12	12	171	12·2	36·84
Dropsy ...	4	4	8	2	5	4	5	10	6	6	10	11	75	5·4	16·00
Atrophy and Anæmia ..	16	9	11	17	8	17	19	15	11	13	17	10	163	11·6	20·24
Scurvy ...	...	...	4	4	7	2	5	5	4	6	12	..	49	3·5	...
Rheumatism ...	39	30	39	43	51	50	32	31	35	32	32	32	446	31·8	1·29
Venereal Diseases ...	21	24	34	38	25	38	28	26	28	22	23	18	325	23·2	
Eye Diseases ..	11	6	6	12	14	12	8	26	11	21	8	9	144	10·3	
Abscess and Ulcer ...	58	58	54	67	65	81	72	57	64	58	44	55	733	52·3	
Wounds and Accidents	62	56	50	56	59	52	38	37	37	42	41	34	564	40·2	
All other causes ...	149	164	163	177	178	126	136	133	146	122	120	113	1,727	123·1	
	1,005	986	1,148	1,224	1,260	1,311	1,630	1,894	1,781	2,012	1,686	1,428	17,365		
	Admitted per 1,000 of the Average Strength in each Month.														
	71·7	70·5	83·0	88·3	89·5	91·6	114·5	133·3	125·1	143·0	121·6	104·8	1238·1		

JAILS OF THE BENGAL PRESIDENCY, 1871.

III.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in CHOTA NAGPORE, and in the DINAPORE, BENARES, OUDE, and CAWNPORE DISTRICTS during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery	Diarrhœa.	Hepatitis	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	18,365	550	30·0	67	...	...	...	2	1	1	23	7	...	...	6	1	3	1	...	17	1	4
February ...	18,543	439	23·7	25	...	...	...	...	1	...	6	4	...	...	4	1	3	1	...	2	...	3
March ...	18,456	412	22·3	30	...	...	...	...	...	3	8	2	...	...	3	1	5	...	...	3	1	4
April ...	18,450	403	21·8	26	...	1	...	...	...	...	6	3	...	...	3	...	4	2	...	1	1	5
May ...	18,339	382	20·8	33	...	1	...	...	4	...	10	...	...	1	2	...	2	2	...	5	1	6
June ...	18,513	365	19·7	24	...	...	...	...	1	...	9	1	...	...	3	1	4	...	1	1	1	2
July ...	18,576	407	21·9	28	...	...	...	...	1	...	8	3	...	...	2	...	4	1	...	1	1	7
August ...	18,543	473	25·5	43	...	...	...	1	1	1	18	5	...	4	3	...	3	...	...	2	...	6
September ...	18,680	565	30·2	33	...	...	...	1	1	...	11	11	...	...	3	...	1	...	...	3	...	2
October ...	18,812	674	35·8	64	...	...	...	1	...	1	32	12	...	...	2	...	4	3	...	4	1	4
November ...	19,109	696	36·4	87	...	5	...	...	1	...	40	13	...	2	11	...	4	1	...	4	1	5
December ...	19,241	572	29·7	140	...	2	...	3	2	1	69	14	1	...	18	2	7	1	...	1	2	17
						9	...	8	13	7	240	75	1	7	60	6	44	12	1	41	10	63
						Died per 1,000 of the Average Strength.																
For the year ...	18,636	495	26·6	600	32·20	·48	...	1·13		·38	16·90		·05	·38	3·22	·32	2·36	·64	·05	2·36	·54	3·39

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength	Died out of each hundred treated.
Cholera ...	...	...	1	6	2	1	2	1	...	...	19	3	35	1·9	25·71
Smallpox ...	1	6	1	4	2	...	...	1	...	...	4	4	23	1·2	...
Fever, Intermittent ...	305	276	339	423	382	348	150	510	796	1,071	756	382	6,053	324·8	·13
„ Remittent and Continued ...	9	7	13	8	12	8	11	14	15	11	10	6	124	6·7	10·48
Apoplexy ...	...	...	3	...	...	1	...	1	...	2	...	2	9	·5	77·78
Dysentery ...	156	77	134	109	107	115	152	253	283	193	240	157	1,976	106·0	9·44
Diarrhœa ...	66	76	93	102	103	92	113	175	130	117	180	111	1,361	73·0	
Hepatitis ...	1	2	...	...	...	...	1	...	...	...	...	1	5	·3	20·00
Spleen Disease ...	6	1	3	11	5	8	6	7	2	7	9	9	77	4·2	9·09
Respiratory Diseases ...	36	37	31	22	23	21	27	27	18	32	53	52	379	20·3	15·83
Phthisis Pulmonalis ...	20	5	5	14	7	4	7	6	3	14	3	3	91	4·9	48·35
Dropsy ...	1	1	1	4	1	...	...	2	2	4	3	...	19	1·0	63·16
Atrophy and Anæmia ...	123	8	22	10	16	15	21	27	21	19	14	21	317	17·0	13·88
Scurvy ...	1	...	...	...	...	2	...	...	1	1	4	3	12	·6	8·33
Rheumatism	31	20	21	32	28	21	20	21	23	25	25	24	291	15·6	1·90
Venereal Diseases ...	24	13	28	24	32	28	27	22	28	18	13	19	276	14·8	
Eye Diseases	13	11	23	15	18	27	22	19	19	20	24	11	222	11·9	
Abscess and Ulcer ...	133	128	117	87	101	170	161	144	139	128	120	99	1,527	82·0	
Wounds and Accidents	57	66	82	63	77	58	53	63	62	86	63	55	785	42·1	
All other causes	73	75	104	91	108	95	84	82	84	83	80	96	1,055	56·6	
	1,056	812	1,021	1,025	1,024	1,014	1,163	1,384	1,626	1,831	1,620	1,061	14,637		
	Admitted per 1,000 of the Average Strength in each Month.														
	57·5	43·8	55·3	55·6	55·8	54·8	62·6	74·6	87·0	97·3	84·8	55·1	785·4		

JAILS OF THE BENGAL PRESIDENCY, 1871.

IV.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the CENTRAL PROVINCES, excluding JUBBULPORE and SAUGOR, during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS.																
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	2,085	100	48·0	5	..	..	...	...	...	1	2	.	..	..	...	..	...	...	...	..	...	2
February ...	2,105	96	45·6	5	...	..	...	..	...	...	2	1	..	...	..	..	...	..	1	...	1	...
March ...	2,072	93	44·9	8	..	...	...	...	3	..	1	...	...	...	2	.	2	...	..	...	...	...
April ...	2,038	79	38·8	2	...	..	..	...	..	...	..	..	...	..	..	...	1	...	1	...	...	...
May ...	2,071	79	38·1	6	..	2	...	...	...	..	...	2	.	...	2	...	...	...	...	...	...	...
June ...	2,086	70	33·5	...	...	..	...	...	..	.	..	...	...	...	.	...	...	...	...	...	...	...
July ..	2,101	82	39·0	1	..	...	..	...	..	..	1	...	...	...	...	...	...	...	...	.	...	...
August ...	2,153	79	36·7	...	...	...	...	...	...	..	...	...	..	...	...	.	..	.	.	...	...	...
September ...	2,101	92	42·0	8	...	...	...	1	1	.	1	1	...	..	1	.	1	...	...	1	1	...
October ...	2,097	94	44·8	10	...	...	...	...	...	..	3	4	..	..	..	1	..	1	...	...	1	...
November ...	2,046	105	51·3	7	...	...	..	...	1	..	1	1	..	1	1	..	...	..	...	..	1	1
December ...	2,016	90	49·1	4	..	...	...	...	1	.	2	..	...	..	...	...	...	.	...	...	...	1
						2	...	1	6	1	13	9	..	1	6	1	4	1	2	1	4	4
						Died per 1,000 of the Average Strength.																
For the year ..	2,088	89	42·6	56	26·82	·96	.	3·35		·48	10·54		...	·48	2·88	·48	1·91	·48	·96	·48	1·91	1·91

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	..	...	...	...	2	2	...	...	...	..	...	...	4	1·9	50·00
Smallpox ..	...	1	...	...	...	...	...	...	...	.	...	...	1	·5	...
Fever, Intermittent ...	78	101	84	87	87	62	83	142	144	181	177	138	1,364	653·3	·07
„ Remittent and Continued ..	1	4	8	5	2	2	5	7	3	2	4	4	47	22·5	12·77
Apoplexy ...	...	...	1	...	...	...	..	...	...	..	...	...	1	·5	...
Dysentery ...	8	8	10	4	4	11	15	32	23	20	12	15	162	77·6	6·30
Diarrhœa ..	13	12	13	10	21	15	33	11	30	15	5	9	187	89·6	
Hepatitis ...	...	...	...	...	...	...	...	.	...	1	...	...	1	·5	...
Spleen Disease ..	...	...	...	2	3	...	2	...	..	1	4	1	13	6·2	7·70
Respiratory Diseases ..	10	9	4	8	6	4	2	4	1	10	5	12	75	35·9	8·00
Phthisis Pulmonalis ...	1	...	1	...	...	...	...	...	1	...	...	..	3	1·4	100·00
Dropsy ...	...	...	..	1	...	...	...	..	...	1	...	.	2	1·0	50·00
Atrophy and Anæmia ...	...	...	...	2	2	1	1	2	...	2	5	.	15	7·2	6·67
Scurvy ...	...	...	2	...	...	1	...	...	...	...	1		4	1·9	50·00
Rheumatism ...	6	9	9	2	9	4	7	9	11	13	9	16	104	49·8	·84
Venereal Diseases ...	3	9	11	7	4	6	6	5	3	5	3	5	67	32·1	
Eye Diseases ...	...	...	3	...	1	...	9	2	6	5	5	..	31	14·8	
Abscess and Ulcer ...	53	51	48	38	55	68	40	40	36	31	30	32	522	250·0	
Wounds and Accidents	20	8	6	10	8	4	4	3	1	6	4	9	83	39·7	
All other causes ...	22	17	17	10	25	15	30	20	22	41	13	31	263	126·0	
	215	220	217	186	229	195	237	277	281	334	277	272	2,949		
	Admitted per 1,000 of the Average Strength in each Month.														
	103·1	108·8	104·7	91·3	110·6	93·5	112·8	128·7	128·3	159·3	135·4	134·9	1412·4		

JAILS OF THE BENGAL PRESIDENCY, 1871.

V.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the AGRA DISTRICT, and in CENTRAL INDIA during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths.																
						Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	3,654	100	27·4	5	...	...	...	...	...	1	2	...	...	...	...	1	...	...	...	...	..	1
February ...	3,582	95	26·5	5	...	...	...	...	...	...	1	...	...	...	1	...	1	...	1	...	...	1
March ...	3,487	85	24·4	3	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	..	..	1
April ...	3,380	78	23·1	3	...	..	...	...	1	...	...	...	...	...	...	...	...	...	...	..	1	1
May ...	3,345	64	19·1	4	.	...	...	...	2	...	...	..	...	...	1	...	...	...	...	...	1	...
June ...	3,389	67	19·8	...	...	...	...	...	..	...	...	...	...	...	...	...	...	.	...	..	..	...
July ...	3,109	73	21·4	3	...	..	.	.	2	...	..	...	...	...	...	...	...	...	..	..	..	1
August ...	3,340	89	26·6	4	...	...	..	...	1	..	1	2	...	...	...	...	...	...	...	..	...	...
September ...	3,348	110	32·9	3		..	...	...	1	...	1	..	...	...	...	..	...	...	...	...	...	1
October ...	3,293	114	34·6	16	...	...	...		1	1	6	1	..	...	5	...	...	1	...	...	1	...
November ...	3,272	114	34·8	8	...	...	..	...	...	...	4	...	...	...	2	...	...	1	...	..	1	...
December ...	3,235	88	27·2	13	...	...	...	...	1	...	4	1	...	...	5	...	...	...	...	...	...	2
						...	...	..	9	2	19	4	1	...	15	1	1	2	1	...	4	8
						Died per 1,000 of the Average Strength.																
For the year ...	3,395	90	26·5	67	19·73	...	...	2·65		·59	6·78		·29	...	4·42	·29	·29	·59	·29	...	1·18	2·36

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...
Smallpox ...	...	..	...	...	...	.	..	..	..	...	..	...	...	...	...
Fever, Intermittent	50	57	74	83	53	41	69	108	157	133	122	64	1,014	298·7	...
" Remittent and Continued ...	...	3	3	12	10	4	15	16	23	12	7	2	107	31·5	8·41
Apoplexy ...	1	...	..	...	1	...	...	...	...	2	...	...	4	1·2	50·00
Dysentery ..	13	26	19	18	5	7	20	15	23	30	25	25	226	66·6	6·73
Diarrhœa ...	12	12	17	10	9	7	12	16	9	2	6	4	116	34·2	
Hepatitis ...	...	..	1	1	...	...	...	..	...	...	...	...	2	·6	...
Spleen Disease ...	3	3	2	1	2	...	...	1	...	1	2		15	4·4	..
Respiratory Diseases	16	14	16	12	8	8	12	12	3	15	10	19	145	42·7	10·34
Phthisis Pulmonalis ...	...	1	...	...	...	...	...	...	1	..	...	1	3	·9	33·33
Dropsy ...	...	..	...	...	...	...	...	...	...	..		...	...	...	...
Atrophy and Anæmia ...	.	5	1	1	1	...	...	...	...	...	...	1	9	2·7	...
Scurvy ...	...	3	...	..	...	..	1	...	...	...	...	...	4	1·2	25·00
Rheumatism .	5	5	4	1	5	1	4	3	3	1	1	...	33	9·7	1·74
Venereal Diseases ...	9	4	3	8	5	6	7	4	...	2	2	...	50	14·7	
Eye Diseases ..	...	2	5	5	7	8	7	11	2	3	1		51	15·0	
Abscess and Ulcer ..	26	17	21	18	35	15	23	27	26	26	22	22	281	82·8	
Wounds and Accidents ...	9	10	4	8	10	11	10	3	9	6	4	2	86	25·3	
All other causes ...	17	17	22	30	30	34	20	22	22	9	15	9	247	72·7	
	161	179	195	208	181	145	200	238	278	242	217	149	2,393		
	Admitted per 1,000 of the Average Strength in each Month.														
	44·1	50·0	55·9	61·5	54·1	42·8	58·7	71·1	83·0	73·5	66·3	46·1	704·9		

JAILS OF THE BENGAL PRESIDENCY, 1871.

VI.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the ROHILCUND and MEERUT DISTRICTS during the Year 1871, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	6,150	199	32·4	44	...	..	.	1	9	..	15	3	...	...	7	...	.	...	.:	4	1	4
February ...	5,983	146	24·4	13	..	.	.	...	3	1	4	1	..	...	3	...	..	1	...	...	...	...
March ...	5,900	142	24·1	8	..	.	.	..	4	..	1	...	.	.	1	..	..	..	...	1	..	1
April ...	5,974	142	23·8	15	...	..	..	..	7	..	2	1	..	...	4	..	...	...	...	...	...	1
May ...	6,010	120	20·0	13	...	.	...	.	6	...	...	2	...	1	...	...	...	...	...	...	...	4
June ...	6,109	111	18·2	5	..	..		...	1	...	..	..	..	...	3	...	...	...	...	...	...	1
July ..	6,045	137	22·7	12	...	...	...	.	4	..	.	2		...	1	...	1	...	..	2	...	2
August ...	6,070	168	27·6	10	...	.	...		7	..	6	1	...	..	...	...	1	1	..	1	...	2
September .	6,077	221	36·4	37	...	.	..	4	10	.	16	7	...	...	...	...	...	...	..	...	...	...
October ...	6,030	240	39·6	66	...	...	...	6	6	.	34	16	..		2	1	.	..	...	...	...	1
November ...	5,941	201	33·8	55	...	...	.	2	6	1	25	13	..	...	4	..	1	...	...	2	...	1
December ...	5,778	159	27·5	45	...	..	..	..	5		17	10	.	...	7	2	...	...	...	4	...	...
						...	.	13	68	2	120	56	.	1	32	3	3	2	.	14	1	17
						Died per 1,000 of the Average Strength.																
For the year .	6,007	166	27·6	332	55·27			13·48		·33	29·30		.	·17	5·33	·50	·50	·33	...	2·33	·17	2·83

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	..	...	...	...	.	..	..	...	..	...	...	.	...	...
Smallpox ..	...	...	..	..	2	...	...	..	...	...	.	...	2	·3	...
Fever, Intermittent	106	52	98	106	119	127	230	437	468	401	174	85	2,412	401·5	·54
" Remittent and Continued	10	6	14	23	10	...	19	20	46	26	29	17	231	38·5	29·44
Apoplexy ...	...	1	...	..	..	11	..	..	..	.	1	...	2	·3	100·00
Dysentery .	36	13	18	10	14	21	17	51	100	73	54	48	455	75·7	23·98
Diarrhœa ...	20	13	20	26	16	14	27	18	43	38	25	19	279	46·5	
Hepatitis ..		...	1	2	..	...	..	2		.	..	...	5	·8	...
Spleen Disease .	1	1	2	3	2	1	2	3	4	3	...		22	3·7	4·55
Respiratory Diseases	16	22	13	25	9	4	8	11	12	16	28	52	216	36·0	14·81
Phthisis Pulmonalis . .	...	.	1	1	.	1	2	1		1		.	7	1·2	42·86
Dropsy .	1	1	..	...	1	.	1	1		...	.		5	·8	40·00
Atrophy and Anæmia .	5	1	4	5	2	3	1	5	1	7	7	7	48	8·0	29·17
Scurvy ...	1	.	.	...	..	.	...	...	..	..	.	...	1	·2	...
Rheumatism . .	10	4	6	4	7	7	4	6	9	7	9	8	81	13·5	1·64
Venereal Diseases ..	15	6	9	4	8	7	8	1	9	11	3	5	89	14·8	
Eye Diseases ...	4	3	7	5	4	7	11	8	5	8	1	2	68	11·3	
Abscess and Ulcer ...	75	51	39	44	32	48	43	51	46	51	38	33	551	91·7	
Wounds and Accidents...	6	11	25	31	17	19	18	12	55	16	17	11	238	39·6	
All other causes ..	29	18	26	31	18	28	20	17	22	15	14	16	264	43·9	
	335	203	283	320	261	208	417	647	820	676	403	303	4,966		
	Admitted per 1,000 of the Average Strength in each Month.														
	54·5	33·9	48·0	53·6	43·1	48·8	69·0	106·4	134·9	111·9	67·8	52·4	820·7		

JAILS OF THE BENGAL PRESIDENCY, 1871.

VII.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the PUNJAB during the Year 1871, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	13,250	273	20·6	53	...	...	...	3	11	...	8	4	...	...	21	...	1	...	...	1	...	4
February ...	13,181	333	25·3	52	...	...	1	3	31	...	1	3	...	2	8	...	1	...	...	...	...	2
March ...	12,700	242	18·9	24	...	...	...	2	7	...	2	2	...	...	6	...	2	...	...	...	...	3
April ...	12,883	221	17·2	18	...	...	...	1	4	...	1	1	...	...	5	1	...	...	...	...	2	3
May ...	12,876	254	19·7	22	...	...	...	1	8	2	2	...	...	...	3	...	...	1	...	1	1	3
June ...	13,224	259	19·6	23	..	...	...	1	1	9	3	1	..	...	5	...	...	...	...	1	1	1
July ...	13,354	275	20·6	10	...	...	...	...	3	1	1	1	...	...	1	...	...	...	...	...	2	1
August ...	13,690	384	28·1	20	...	...	...	4	4	...	1	5	...	...	...	..	3	...	...	2	...	1
September ...	13,851	370	26·7	32	...	...	...	3	3	1	4	6	...	..	6	...	1	1	...	1	1	5
October ...	13,881	335	24·1	31	...	...	...	...	1	..	10	6	...	3	4	...	1	1	...	1	1	3
November ...	13,933	325	23·3	33	...	...	...	1	3	...	9	5	...	...	6	...	1	2	...	2	2	2
December ...	13,707	272	19·8	46	...	...	1	2	4	...	6	8	1	...	15	...	1	...	...	1	2	5
						...	2	21	80	13	48	42	1	5	80	1	11	5	...	10	12	33
						Died per 1,000 of the Average Strength.																
For the year ..	13,385	295	22·0	364	27·19	...	·15	7·55		·95	6·72		·08	·37	5·98	·08	·82	·37	...	·75	·90	2·47

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	2	...	...	...	1	...	..	...	...	...	1	5	9	·7	22·22
Fever, Intermittent ..	380	260	302	296	414	409	650	1,007	785	559	510	264	5,836	436·0	·36
„ Remittent and Continued ..	10	138	33	33	33	10	20	7	13	6	10	9	322	24·1	24·84
Apoplexy ..	...	...	...	...	6	24	6	...	1	2	1	...	40	3·0	32·50
Dysentery ...	61	37	38	33	33	40	44	93	84	94	85	40	682	51·0	7·69
Diarrhœa ...	33	38	42	39	19	26	40	65	68	52	41	26	489	36·5	
Hepatitis ...	1	1	1	...	...	...	...	1	1	...	...	1	6	·5	16·67
Spleen Disease ...	8	9	6	9	9	5	4	8	6	10	12	11	97	7·2	5·15
Respiratory Diseases ...	79	64	40	24	35	18	11	21	31	38	72	91	524	39·1	15·27
Phthisis Pulmonalis ...	3	2	3	2	2	3	5	1	...	1	...	2	24	1·8	45·83
Dropsy ...	...	1	...	3	2	...	3	...	1	5	1	2	18	1·3	27·78
Atrophy and Anæmia ...	13	4	5	4	3	4	2	3	2	6	3	8	57	4·2	17·55
Scurvy ...	5	2	3	...	...	3	1	1	1	1	1	...	18	1·3	...
Rheumatism ...	11	10	23	12	8	10	13	11	13	21	11	7	150	11·2	1·57
Venereal Diseases ...	15	6	10	15	6	14	11	8	9	11	10	12	127	9·5	
Eye Diseases ...	2	6	13	21	36	20	22	25	13	9	9	3	179	13·4	
Abscess and Ulcer ...	43	59	66	78	76	120	116	139	111	90	97	81	1,076	80·4	
Wounds and Accidents ...	22	24	25	26	49	46	39	41	34	26	18	20	370	27·7	
All other causes ...	48	71	82	91	86	114	106	115	82	82	82	69	1,028	76·8	
	736	732	692	686	818	866	1,093	1,546	1,255	1,013	964	651	11,052		
	Admitted per 1,000 of the Average Strength in each Month.														
	55·5	55·5	54·1	53·3	63·5	65·5	81·9	112·9	90·6	73·0	69·2	47·5	825·7		

JAILS OF THE BENGAL PRESIDENCY, 1871.

VIII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the JAIL POPULATION of the various PROVINCES of the BENGAL PRESIDENCY.

	Ratio per 1,000 of the Average Strength.						
	Bengal Proper and Assam.	Gangetic Provinces and Oude.	Central Provinces (excluding Saugor and Jubbulpore).	Agra and Central India.	Rohilcund and Meerut.	Punjab.	Bengal Presidency.
1.—Average Daily Sick-rate of each Month.							
January ...	33·5	30·0	48·0	27·4	32·4	20·6	29·4
February ...	31·7	23·7	45·6	26·5	24·4	25·3	27·0
March ...	32·6	22·3	44·9	24·4	24·1	18·9	25·2
April ...	34·1	21·8	38·8	23·1	23·8	17·2	24·7
May ...	33·8	20·8	38·1	19·1	20·0	19·7	24·2
June ...	35·2	19·7	33·5	19·8	18·2	19·6	23·9
July ...	40·2	21·9	30·0	21·4	22·7	20·6	26·8
August ...	44·1	25·5	36·7	26·6	27·6	28·1	31·4
September ...	45·3	30·2	42·0	32·9	36·4	26·7	34·3
October ...	51·0	35·8	44·8	34·0	39·6	24·1	37·4
November ...	49·3	36·4	51·3	34·8	33·8	23·3	36·5
December ...	45·4	29·7	40·1	27·2	27·5	19·8	31·4
Average of the Year ...	39·7	26·6	42·6	26·5	27·6	22·0	29·4
2.—Composition of the Admission-rate of the Year.							
Cholera ...	9·4	1·9	1·9	...	...	...	3·0
Smallpox ...	·1	1·2	·5	...	·3	·7	·7
Fevers ...	576·3	831·5	675·8	330·2	410·0	460·1	444·8
Apoplexy ...	·6	·5	·5	1·2	·3	3·0	1·1
Dysentery and Diarrhœa ...	268·5	170·0	167·2	100·8	122·2	87·5	168·6
Hepatitis ...	1·6	·3	·5	·6	·8	·5	·7
Spleen Disease ...	23·0	4·2	6·2	4·4	3·7	7·2	9·5
Respiratory diseases ...	45·0	20·3	35·9	42·7	36·0	30·1	34·2
Phthisis Pulmonalis ...	12·2	4·9	1·4	·9	1·2	1·8	5·2
Dropsy ...	5·4	1·0	1·0	...	·8	1·3	2·1
Atrophy and Anæmia ...	11·6	17·0	7·2	2·7	8·0	4·2	10·6
Scurvy ...	3·5	·6	1·9	1·2	·2	1·3	1·5
Rheumatism ...	31·8	15·6	49·8	9·7	13·5	11·2	19·2
Venereal Diseases ...	23·2	14·8	32·1	14·7	14·8	9·5	16·2
Eye Diseases ...	10·3	11·9	14·8	15·0	11·3	13·4	12·1
Abscess and Ulcer ...	52·8	82·0	250·0	82·8	91·7	80·4	81·5
Injuries ...	40·2	42·1	30·7	25·3	39·6	27·7	36·9
All other causes ...	123·1	56·6	126·0	72·7	42·3	70·8	79·5
Admission-rate of the Year ...	1238·1	785·4	1412·4	704·9	826·7	825·7	927·4
3.—Composition of the Death-rate.							
Cholera ...	3·71	·48	·96	...	...	...	1·10
Smallpox ...	...	...	...	...	...	·15	·03
Fevers ...	3·78	1·13	3·35	2·65	13·48	7·55	4·78
Apoplexy .	·43	·38	·48	·59	·33	·95	·54
Dysentery and Diarrhœa ...	15·61	16·00	10·54	6·78	29·30	6·72	14·60
Hepatitis .	·60	·05	...	·29	...	·08	·17
Spleen Disease ...	·71	·38	·48	...	·17	·37	·42
Respiratory Diseases . .	4·35	3·22	2·88	4·42	5·33	5·98	4·41
Heart Disease ...	·57	·32	·48	·29	·50	·08	·35
Phthisis Pulmonalis ...	4·49	2·36	1·91	·29	·50	·82	2·19
Dropsy ...	·85	·64	·48	·59	·33	·37	·59
Atrophy and Anæmia .	2·35	2·36	·48	...	2·33	·75	1·77
All other causes .	3·07	3·98	4·78	3·83	3·00	3·37	3·53
Death-rate of the Year ...	40·42	32·20	26·82	19·73	55·27	27·19	34·52
	Died out of each hundred cases treated.						
4.—Mortality relative to the number treated.							
Cholera ...	39·30	25·71	50·00	...	...	...	36·84
Smallpox .	...	...	...	..	..	22·22	6·41
Intermittent Fevers ...	·31	·13	·07	...	·54	·36	·27
Remittent and Continued Fevers ..	20·74	10·48	12·77	8·41	29·44	24·84	21·12
Apoplexy .	66·67	77·78	...	50·00	100·00	32·50	47·69
Dysentery and Diarrhœa . .	5·82	9·44	6·30	6·73	23·98	7·69	8·71
Hepatitis .	31·82	20·00	...	...	..	16·67	24·39
Spleen Disease ...	3·10	9·09	7·70	...	4·55	5·15	4·39
Respiratory Diseases ...	9·67	15·83	8·00	10·34	14·81	15·27	12·89
Phthisis Pulmonalis ..	36·84	48·35	100·00	33·33	42·86	46·83	42·14
Dropsy ...	16·00	63·16	50·00	..	40·00	27·78	28·57
Atrophy and Anæmia . .	20·24	13·88	6·67	..	29·17	17·55	16·75

JAILS OF THE BENGAL PRESIDENCY, 1871.

IX.

TABLE showing the GENERAL STATISTICS of SICKNESS and MORTALITY in the JAILS of the BENGAL PRESIDENCY, and the AVERAGE NUMBER DAILY SICK in each MONTH.

*STATIONS.	Average Strength for the Year.	Daily Sick per 1,000 of Average Strength in each Month.												Daily Sick per 1,000 of Average Strength for the Year.	Admitted into Hospital per 1,000 of Average Strength.	Died per 1,000 of Average Strength.		
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A. Cholera.	B. All other Causes.	C. All Causes.
Presidency ...	769	24·4	12·4	16·9	21·2	24·8	26·3	28·9	37·2	46·2	67·2	57·9	42·6	35·1	1814·0	...	...	7·80
Alipore ...	2,247	45·3	40·3	47·1	58·4	58·3	63·3	71·0	80·5	74·4	79·4	79·5	80·0	65·9	1615·1	5·79	49·84	55·63
Baraset ...	282	32·8	33·2	37·2	40·2	30·3	35·6	41·5	58·0	62·3	83·9	117·8	80·8	56·7	1517·7	...	...	78·01
Jessore ...	435	37·3	34·3	35·7	40·2	33·7	50·8	66·5	95·5	72·8	65·0	71·1	64·8	57·5	1096·6	...	...	41·38
Kishnaghur ...	306	32·8	24·0	34·8	37·5	42·4	29·1	82·8	34·8	40·5	31·7	35·0	26·5	32·7	696·1	...	...	6·54
Moorshedabad ...	180	33·0	34·7	59·4	60·0	50·3	56·7	52·3	93·9	112·8	136·7	113·5	76·9	66·7	1401·1	...	...	27·78
Hooghly ...	510	41·9	24·3	30·8	37·3	32·9	36·8	35·4	47·9	66·7	103·2	72·2	47·0	47·1	1749·0	15·69	62·74	78·43
Burdwan ...	213	28·4	37·6	29·0	9·5	18·8	23·3	37·0	50·7	48·9	67·0	113·0	188·6	56·3	2187·8	...	...	61·03
Bancoorah ...	286	13·2	13·2	13·4	13·7	13·8	6·8	13·5	20·5	14·1	10·6	7·8	4·1	14·0	297·2	...	...	13·99
Purulea ...	142	7·3	13·5	17·4	37·3	18·6	18·2	20·0	34·7	31·5	15·1	22·1	13·3	21·1	725·3	7·04	28·17	35·21
Sooree ...	198	39·0	28·6	17·1	30·9	36·0	42·9	52·6	71·0	84·3	62·3	62·9	53·8	50·5	1091·8	...	...	25·25
Rajmehal and Pakour ..	134	9·2	9·5	10·6	17·4	7·6	6·5	13·1	14·3	27·6	31·6	13·0	7·0	14·9	738·8	22·39	22·39	44·78
Deoghur and Sub-divns.	80	12·3	25·3	26·7	16·1	14·3	26·3	26·0	13·0	38·5	31·9	10·0	11·0	25·0	650·0	...	.	12·50
Malda ...	79	113·6	66·7	40·0	49·2	22·0	27·8	43·9	38·1	54·9	97·6	83·3	101·4	50·6	1797·5	25·32	63·29	88·61
Dinagepore ...	349	34·9	56·8	74·1	64·3	32·6	54·6	69·3	81·2	70·6	54·4	60·5	70·0	60·2	2621·8	...	...	60·17
Rajshahye ...	558	46·8	37·0	37·3	17·8	27·3	27·7	34·1	29·9	23·6	31·1	20·9	20·3	28·7	838·7	...	...	62·72
Rungpore ..	275	42·5	33·6	37·5	37·6	35·6	44·0	45·8	35·2	39·9	37·9	44·2	48·6	40·0	1301·8	...	...	65·45
Bograh .	90	43·5	54·1	45·5	30·2	35·7	23·8	61·0	86·4	117·6	76·9	64·9	50·5	55·6	1577·8	...	...	111·11
Mymensingh	442	17·4	14·4	10·8	8·7	8·9	13·5	16·4	11·7	9·8	17·4	27·6	35·5	16·8	631·2	...	...	27·15
Pubna ...	160	73·9	59·7	61·2	56·7	43·0	34·5	61·7	56·7	68·4	79·4	53·4	50·0	56·2	2693·7	...	...	6·25
Furreedpore ...	377	14·7	11·5	16·5	22·2	22·4	18·9	17·8	19·1	18·0	21·1	29·2	35·0	21·2	710·9	...	..	5·31
Backergunge ...	413	25·5	22·2	19·3	28·1	26·2	23·4	21·6	23·4	38·0	38·5	28·2	34·3	27·1	864·6	6·77	60.95	67·72
Noacolly ...	178	29·2	29·9	27·5	20·6	25·0	30·0	35·9	33·0	62·5	69·6	51·0	31·8	39·3	1455·0	...	...	5·62
Chittagong ..	236	31·8	37·0	34·3	34·0	32·9	31·5	40·7	30·0	18·1	15·7	16·6	13·3	29·7	843·2	..	...	33·90
Tipperah ..	301	12·6	18·6	12·5	12·9	18·7	15·8	13·8	17·4	13·3	14·2	11·2	14·5	13·3	774·1	...	...	9·97
Dacca ...	651	30·2	25·0	26·9	29·7	24·9	21·6	23·7	27·6	31·2	25·4	32·8	18·4	26·1	797·2	..	...	27·65
Sylhet ..	397	10·4	17·4	20·1	25·2	30·8	23·2	36·2	26·0	39·8	39·2	38·6	42·3	30·2	906·8	...	...	30·23
Shillong ...	38	111·1	76·9	78·9	156·2	88·2	88·2	85·7	157·0	93·0	43·5	93·0	25·6	78·0	1736·0	..	...	...
Cachar	118	60·6	27·5	51·3	53·6	26·8	35·4	46·5	42·4	37·6	67·7	25·2	56·5	42·4	1728·8	..	...	16·95
Gowalpara .	118	63·0	55·1	78·1	69·9	70·3	77·5	72·1	63·2	50·5	39·1	36·4	35·3	59·3	2245·8	8·47	42·38	50·85
Gowhatty ...	100	10·3	...	10·1	19·4	43·5	70·8	90·1	76·9	76·2	86·0	46·0	24·4	50·0	1190·0	80·00	100·00	180·00
Seebsaugor .	116	22·9	16·7	17·1	32·0	45·8	31·2	44·6	51·7	43·5	54·5	49·4	40·5	34·5	1525·9	...	..	17·24
Nowgong .	90	39·0	37·0	66·7	50·0	56·2	31·6	61·9	61·9	68·0	64·5	54·9	40·4	55·6	1444·5	55·55	55·55	111·11
Tezpore ...	171	69·1	60·8	58·1	28·6	49·4	66·7	68·6	65·1	48·5	59·9	42·4	31·7	52·6	2368·4	..	...	11·70
Debrooghur .	67	57·1	32·3	17·2	32·3	20·4	42·3	32·8	30·8	57·1	27·0	13·0	13·3	29·0	2283·6	14·93	...	14·93
Midnapore ...	981	33·7	27·6	25·5	25·7	29·4	19·4	11·9	15·2	20·2	24·3	25·3	18·6	23·4	660·5	2.04	20·39	22·43
Balasore .	171	31·6	41·9	18·8	12·4	11·4	16·7	21·3	25·0	20·6	51·7	33·8	21·0	23·4	906·4	...	..	23·39
Cuttack .	257	4·6	9·0	22·6	29·9	43·5	41·3	40·8	32·7	36·9	42·6	29·8	10·7	31·1	828·8	...	...	7·78
Pooree ..	96	53·8	61·2	70·7	54·3	44·9	53·8	77·8	57·7	43·0	30·3	28·0	21·7	52·1	2510·4	...	...	10·42
Monghyr	279	28·8	17·7	7·4	3·7	7·0	7·0	16·8	9·9	6·8	15·4	12·0	8·3	10·8	190·4	3·58	25·09	28·67
Bhaugulpore ..	550	11·5	21·1	24·9	14·5	12·3	25·3	9·0	15·4	10·3	24·8	20·1	19·5	18·2	380·0	3·64	52·72	56·36
Purneah .	268	36·4	25·5	25·4	27·7	31·5	29·7	36·5	47·1	67·9	85·7	92·4	40·6	44·8	1044·8	...	...	37·31
Julpigoree .	92	40·7	55·0	71·4	85·5	41·3	45·5	66·7	41·7	54·1	90·6	88·2	98·4	65·2	1369·6	...	...	163·04
Darjeeling ..	49	.	22·7	..	...	20·4	22·2	21·7	...	20·0	37·7	40·8	.	20·4	306·1	..	...	20·41
	14,026	33·5	31·7	32·6	34·1	33·8	35·2	40·2	41·1	45·3	51·0	40·3	45·4	39·7	1238·1	3·71	36·71	40·42
Chyebassa .	82	28·6	43·5	25·6	65·4	53·6	50·0	31·5	13·3	13·3	41·1	14·3	28·2	36·6	1414·6	...	...	...
Ranchee .	169	46·6	54·1	40·9	50·6	26·3	25·3	76·4	60·2	58·8	54·9	68·2	27·6	47·3	1343·2	..	...	23·67
Hazareebaugh, Central	592	27·5	30·8	35·0	33·7	19·5	18·1	23·2	24·6	18·6	22·2	41·7	24·2	27·0	929·1	...	...	21·96
" District	210	31·9	*60·9	49·8	42·3	34·3	34·5	45·2	41·3	28·8	30·3	34·3	24·5	38·1	1561·9	..	...	28·57
Gyah .	307	29·5	29·3	34·6	34·5	40·4	48·4	20·8	34·0	40·3	57·0	47·5	43·0	40·3	1171.3	...		35·20
Patna .	455	12·4	10·0	23·8	34·3	43·6	39·0	32·0	31·0	38·7	20·4	29·2	15·5	28·6	898·9	8·79	10·99	19·78
Dehree Ghat .	461	23·4	12·5	9·3	12·4	14·9	14·8	17·9	33·2	44.9	41·8	40·8	22·9	23·9	833·0	...	..	21·69
Arrah	343	14·4	10·6	14·4	16·9	16·9	17·1	19·5	21·8	14·5	13·2	19·1	20·8	17·5	414·0	.	...	11·66
Chumparun ..	247	8·8	8·8	21·2	15·2	18·9	33·2	32·7	29·4	50·4	65·2	42·5	38·5	32·4	765·2	.	...	80·97
Mozufferpore .	500	40·4	27·5	15·3	17·1	17·0	15·3	16·0	26·9	39·8	41·9	56·1	41·7	30·0	776·0	..	...	122·00
Chuprah ...	288	7·4	11·7	20·8	8·5	15·6	11·0	6·3	8·8	8·5	9·6	9·9	...	10·4	243·1	...	...	17·36
Ghazeepore	474	8·5	6·2	6·0	7·5	8·1	8·0	8·0	8·1	8·8	12·0	15·1	11·3	8·4	181·4	...	...	16·88
Benares, Central .	1,118	15·5	17·7	20·2	21·5	28·8	24·9	31·5	39·7	38·8	46·4	52·8	61·7	34·0	1405·2	...	...	44·72
" District .	481	40·8	37·0	40·5	31·1	39·5	39·3	40·2	41·0	43·5	48·5	48·0	47·3	41·6	975·1	.	...	35·34
Mirzapore .	280	36·9	14·0	15·9	11·2	15·8	15·6	25·8	37·0	31·1	35·2	36·0	30·5	26·9	769·2	...	...	40·15
Azimghur	339	9·5	3·1	9·0	20·8	11·1	5·2	15·7	20·3	20·9	19·4	24·6	19·2	14·8	731·6	.	...	23·00
Jounpore .	265	6·4	2·9	6·2	20·3	24·4	12·9	19·4	38·2	45·5	64·1	82·0	47·3	18·9	905·7	7·55	33·96	41·51
Goruckpore ..	577	32·8	25·7	28·6	24·6	16·0	17·6	26·7	42·4	74·8	88·9	89·1	95·3	48·5	1497·4	...	...	74·52
Bustee .	245	26·2	17·3	25·9	38·0	18·2	14·8	19·3	23·3	22·8	28·0	43·5	30·4	24·5	922·4	...	...	...
Gondah ..	610	15·5	17·5	20·2	22·9	22·5	23·0	23·5	21·6	20·3	24·1	27·9	20·9	21·3	570·5	...	...	13·11
Baraich ..	316	10·7	14·0	23·5	26·8	12·1	17·0	12·3	17·7	18·5	11·6	23·8	19·4	15·8	563·3	...	...	15·82
Fyzabad ...	711	11·3	11·4	12·2	15·1	12·1	13·7	11·3	10·8	14·2	24·4	20·5	19·4	15·5	549·9	...	...	15·47
Sultanpore ...	394	12·6	12·5	12·5	10·1	7·8	8·5	13·7	12·6	14·4	12·5	12·0	9·8	12·7	416·2	..	...	35·53
Rae Bareilly .	350	22·5	13·5	22·6	26·6	18·4	17·7	21·8	31·8	63·8	35·2	30·0	22·7	25·7	742·9	...	...	20·00
Portabghur ...	124	11·0	9·4	9·1	7·8	20·0	22·2	37·7	17·7	22·7	27·6	22·1	38·2	24·2	1379·1	...	...	32·26
Hurdui ..	236	7·4	..	13·5	3·6	13·0	17·9	28·0	24·3	25·0	31·1	19·2	15·2	16·9	656·8	...	...	38·13
Kheree ..	126	27·0	39·7	35·9	30·7	35·0	31·7	17·9	27·3	40·4	30·9	34·5	24·2	31·7	1500·0	...	...	15·87
Lucknow, Central	1,708	71·9	36·2	15·8	12·9	12·3	11·0	12·1	18·0	20·6	20·1	22·6	18·0	22·8	308·5	...	...	35·13
" District ..	838	41·7	38·1	18·0	16·1	14·5	15·7	13·6	19·3	16·7	16·3	17·5	27·3	21·5	364·0	3·58	28·64	32·22
Seetapore .	675	13·2	12·7	11·6	12·9	18·0	18·6	14·8	16·1	15·2	15·4	12·9	11·4	14·8	595·6	...	...	4·44
Nawabgunge ...	149	20·4	25·5	21·3	21·0	17·6	16·9	33·3	15·6	8·1	18·3	12·2	6·7	20·1	597·3	...	...	13·42
Oonao .	166	34·9	49·7	37·8	26·6	18·8	17·2	11·9	11·4	25·3	7·0	26·3	25·0	24·1	801·2	...	...	24·10
Humeerpore ..	197	33·3	30·6	30·2	36·1	30·2	49·2	46·4	34·5	69·1	69·5	75·4	61·0	45·7	1396·0	...	...	65·99
Oraie	145	39·7	19·7	26·1	25·8	14·7	14·7	21·3	20·5	50·7	78·0	47·3	53·3	34·5	903·5	...	...	48·29
Futtehghur, Central .	709	31·8	19·3	18·0	16·3	21·5	11·2	21·4	31·8	35·0	38·2	41·3	31·9	26·8	832·2	...	...	14·10
" District .	333	40·4	48·6	48·8	42·2	39·9	44·7	38·0	48·0	46·4	49·3	88·7	36·8	42·0	1348·3	...	...	24·02
Cawnpore ..	379	58·1	26·5	34·9	29·6	22·1	22·0	29·2	28·0	49·9	60·6	42·0	35·8	30·9	1036·9	.	...	44·86
Futtehpore	259	52·2	32·7	49·3	44·4	35·3	23·1	23·6	23·3	44·0	53·8	52·2	29·2	38.6	1552·1	...	...	34·75

STATIONS.	Average Strength for the Year.	Daily Sick per 1,000 of Average Strength in each Month.												Daily Sick per 1,000 of Average Strength for the Year.	Admitted into Hospital per 1,000 of Average Strength.	Died per 1,000 of Average Strength.		
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A. Cholera.	B. All other Causes.	C. All Causes.
Banda ...	344	15·9	18·1	20·8	28·5	15·3	24·0	42·2	40·9	44·2	75·1	55·6	41·4	34·9	1517·4	..	..	52·33
Allahabad, Central ...	1,443	30·4	24·4	24·1	26·4	26·2	17·2	20·3	23·8	23·2	52·6	50·1	20·7	20·1	638·3	...	..	24·26
" District ...	860	20·8	27·9	30·4	15·9	14·5	11·8	11·9	13·5	21·2	29·1	26·6	22·8	20·9	402·3	...	...	30·05
Nagode ..	58	100·0	80·6	65·6	48·4	48·4	67·8	93·7	95·2	83·3	122·4	68·2	20·4	69·0	2137·9	...	...	17·24
	18,636	30·0	23·7	22·3	21·8	20·8	19·7	21·9	25·5	30·2	35·8	36·4	29·7	24·6	785·4	·48	31·72	32·20
Raepore ..	251	46·0	47·4	40·2	27·7	38·8	42·9	46·2	44·0	47·1	44·9	66·9	61·5	47·8	1510·0	..	..	20·00
Belaspore ..	66	...	...	...	...	...	...	.	...	...	...	...	...	...	152·1	.	..	...
Mundla .	43	...	...	.	...	...	...	...	...	...	...	..	...	..	302·3	...	...	.
Seonee ..	132	61·9	64·5	61·1	52·6	26·0	33·1	55·9	29·2	36·5	45·0	53·1	42·0	45·5	1671·2	..		60·60
Chindwarra ..	46	...	...	24·4	...	22·7	...	20·0	22·2	18·9	55·6	20·0	41·7	21·7	673·9	.	..	...
Baitool ..	53	18·2	17·9	...	...	24·4	...	..	...	16·7	18·5	18·2	16·1	18·9	320·8	...	.	...
Nursingpore ..	122	7·4	16·7	8·5	16·5	9·0	...	10·8	22·7	13·8	14·2	30·2	28·3	16·4	827·9	.	...	40·98
Hoshungabad .	159	30·0	38·5	33·5	25·6	31·5	32·0	54·3	48·5	61·7	45·1	31·3	40·0	37·7	1396·2	...	...	18·87
Nimar .	67	21·5	48·5	80·5	83·3	55·0	51·5	70·2	60·6	78·1	66·7	45·5	98·8	50·7	2050·7	...	..	...
Sehore ..	57	58·8	...	50·0	74·1	54·5	62·5	72·7	35·7	88·9	50·5	101·1	63·3	70·2	2543·9	.	..	..
Nagpore .	837	68·3	59·8	58·6	44·7	43·5	31·6	37·1	36·3	38·2	54·2	53·3	52·7	47·8	1237·8	2·39	20·31	22·70
Bandhara ..	62	76·9	46·2	30·3	37·0	40·2	42·3	32·3	36·4	51·7	15·6	44·1	42·9	48·4	1903·2	...	...	...
Wurdah ..	52	22·2	20·8	60·0	41·7	35·1	50·0	18·5	15·6	18·9	24·4	40·8	30·2	38·5	1865·4	...	...	...
Chanda ..	87	14·7	14·7	13·0	25·0	37·5	36·6	34·5	20·7	25·0	20·0	31·6	36·6	23·0	862·1	...	...	...
	2,088	48·0	45·6	44·9	38·8	38·1	33·5	30·0	36·7	42·0	44·8	51·3	49·1	42·6	1112·4	·06	25·86	26·82
Jubbulpore ...	491	108·9	88·6	61·5	36·5	19·2	18·7	17·7	18·5	20·0	27·7	48·1	37·7	40·7	993·9	.	...	30·55
Dumoh ..	50	21·7	20·8	23·3	26·3	..	...	31·5	17·9	16·9	...	20·4	19·6	20·0	720·0	..	.	...
Saugor ..	143	45·7	51·4	39·3	43·7	33·1	47·3	47·2	70·2	79·4	70·3	74·8	80·0	55·9	1713·3	.	.	14·00
Lullutpore ..	131	15·4	8·3	17·2	18·3	8·4	..	7·4	13·5	30·7	55·6	41·1	29·6	22·4	358·2	.	...	14·93
Jhansi .	221	4·7	4·6	4·6	14·6	14·9	13·0	..	8·8	9·1	*12·9	13·4	16·9	9·0	199·1	...		27·15
Ajmere	320	43·7	37·9	65·8	70·2	59·9	78·4	71·7	76·4	100·7	98·0	123·5	92·0	75·0	1887·5	...	..	43·75
Muttra ..	193	25·6	23·3	34·0	28·2	·27·9	25·6	19·3	33·8	13·5	44·8	27·8	19·0	31·1	1486·5		...	10·36
Agra, Central ..	1,334	9·0	12·6	10·9	12·9	12·0	10·6	19·4	21·3	25·5	25·2	15·0	8·4	15·0	344·1	..		14·24
" District ..	490	6·1	6·0	4·0	5·9	9·8	6·1	3·9	14·0	20·3	20·8	11·0	9·4	10·2	366·0	.		14·31
	3,395	27·4	26·5	24·4	23·1	19·1	19·8	21·4	26·6	32·9	34·6	34·8	27·2	26·5	704·9		..	19·73
Etawah ...	248	12·8	11·9	11·7	11·2	3·6	15·4	16·1	21·9	60·0	33·5	39·8	15·6	20·2	879·0	.	...	20·16
Mynpoorie ...	279	36·1	31·5	29·7	46·4	42·5	30·3	35·3	27·5	50·1	85·5	79·5	48·6	46·6	985·7	..	...	3·86
Etah ...	200	24·0	13·2	27·8	72·3	41·4	19·6	19·1	23·1	52·6	72·0	23·7	37·3	35·0	1205·0	..	...	25·00
Allyghur	526	12·4	14·5	10·2	14·9	13·3	7·6	8·0	10·2	21·7	28·4	16·3	9·7	15·2	469·6	..	...	7·60
Bolundshuhur ...	128	8·6	10·6	17·4	9·5	18·9	9·8	33·1	47·3	49·7	95·8	53·3	49·6	39·1	976·5	..	..	31·25
Shahjehanpore ...	234	12·2	12·7	20·7	19·6	17·9	10·0	14·2	20·2	26·3	21·5	32·1	22·5	21·4	431·6	..	...	12·82
Budaon ..	251	11·4	12·3	16·1	12·1	8·5	12·6	8·1	12·2	16·7	11·5	10·9	7·4	12·0	406·4	...	..	7·97
Bareilly, Central ..	1,054	23·8	19·8	22·8	24·4	21·9	18·2	19·8	16·8	37·1	40·6	42·3	33·5	26·6	713·6	.	...	46·49
" District	470	23·1	29·7	34·0	29·7	14·6	17·8	22·8	28·8	25·2	23·7	17·3	16·1	23·4	819·1	..	..	25·53
Moradabad ..	362	18·7	17·9	16·6	18·2	10·7	10·5	15·2	18·4	16·3	10·2	12·6	22·6	16·6	*372·9	..	.	35·91
Almorah .	163	41·1	42·0	37·3	37·0	35·5	38·7	45·5	43·0	38·5	42·2	42·0	28·6	36·8	1141·1	.		42·40
Deyrah ..	57	87·7	111·1	74·1	111·1	109·1	55·6	40·0	36·4	16·4	61·5	30·3	37·7	70·2	1110·4	...	..	35·09
Bijnore	177	12·6	12·0	16·8	20·9	16·3	20·6	14·9	19·1	10·5	19·4	20·0	13·4	16·9	807·9	..		28·25
Saharunpore .	304	47·3	40·5	44·1	35·7	33·3	39·3	60·6	68·6	66·9	57·1	44·0	38·1	40·3	1167·8	...	.	59·21
Mozuffernuggur ..	120	34·1	11·0	10·3	8·8	14·1	13·7	23·8	16·4	31·2	22·0	14·7	8·2	16·7	383·3		..	41·67
Meerut, Central ..	989	66·2	28·0	22·7	12·6	[illegible]	10·1	19·2	30·1	43·9	40·0	40·4	36·3	31·3	1007·1	...	...	154·70
" District ..	445	43·4	35·8	27·8	27·7	23·6	23·9	32·3	41·4	37·1	53·6	36·5	31·3	33·7	1334·8	..		98·88
	6,007	32·4	24·4	24·1	23·8	20·0	18·2	22·7	27·6	36·4	29·6	33·8	27·5	27·6	826·7	..	.	55·27
Delhi ...	357	48·0	31·1	19·0	19·1	30·1	21·9	35·2	67·9	78·5	63·7	63·6	51·7	44·8	1490·2	...	..	58·54
Goorgaon ..	191	31·7	33·5	44·6	40·5	30·8	13·7	14·0	42·7	70·0	62·2	27·9	12·6	36·6	1413·6	.	.	26·18
Rohtuck	204	7·7	6·5	9·0	10·0	11·4	11·9	24·9	39·6	43·5	33·5	5·8	17·2	19·6	936·2	...	...	24·51
Hissar ..	226	4·4	11·7	4·0	21·8	54·2	49·6	35·7	17·5	17·8	19·1	21·1	5·3	22·1	1106·2	.	..	22·12
Sirsa	302	22·1	23·5	24·8	18·7	20·0	32·5	34·4	33·3	25·9	27·6	20·4	10·4	26·5	615·9	.	..	19·87
Kurnaul ...	201	9·0	...	...	9·1	9·1	8·4	11·9	10·9	10·3	17·4	11·0	5·3	10·0	507·5			9·95
Umballa .	712	17·4	17·5	17·9	19·8	25·9	21·2	19·4	41·1	55·9	61·6	30·5	13·2	29·5	956·4	.	...	35·11
" Gang at Roopar	543	12·1	27·1	17·5	25·8	44·6	46·6	30·8	40·4	55·2	36·8	42·1	45·5	35·0	1305·7	..	..	68·40
Loodianah .	232	14·8	18·0	14·9	22·2	24·9	32·9	31·4	41·5	32·1	30·0	18·2	23·5	27·0	896·4	.	..	45·05
Jullundur .	383	11·7	15·5	18·7	15·4	21·1	16·5	10·1	13·5	14·4	17·2	17·5	18·7	15·7	433·4	.	...	13·05
Ferozepore ..	408	5·7	11·1	11·5	8·7	16·9	18·8	14·6	13·5	19·1	14·6	10·4	14·7	14·7	419·1	.	..	12·26
Umritsur	641	1·7	1·7	1·7	3·5	6·6	7·7	18·0	24·1	19·0	11·7	8·5	13·8	10·9	466·5	..		14·04
Lahore, Central ...	2,456	14·7	9·1	7·1	7·4	5·7	9·0	17·2	30·6	12·7	15·2	26·8	22·0	15·1	567·2	.	.	15·07
" Female Jail ..	184	52·4	48·4	26·7	35·0	36·8	53·8	64·5	89·4	50·8	39·8	56·5	41·4	48·9	2483·6	..	...	32·61
Sealkote	404	15·8	13·1	21·7	16·5	15·7	18·4	26·2	25·5	29·5	21·2	19·7	14·3	19·8	945·6	..	.	2·48
Dhurmsalla ...	140	20·7	14·4	28·4	26·8	43·2	25·6	19·9	32·5	41·1	33·3	26·5	21·3	26·8	1154·3	...	..	20·85
Goordaspore .	296	19·9	11·5	18·9	21·6	23·3	21·5	16·0	12·8	12·4	11·9	12·2	15·5	16·9	665·5	.	...	23·65
Goojranwalla ..	462	10·0	9·9	9·8	9·2	11·0	15·5	9·7	6·7	12·4	9·5	10·8	8·0	10·8	324·7	.	..	15·15
Goojrat ..	311	3·1	3·2	...	...	...	3·2	...	9·3	9·3	10·4	7·3	4·0	6·4	102·9	.	..	19·29
Shahpore ...	384	5·5	2·6	3·2	...	2·9	2·9	12·7	14·2	13·6	2·2	4·9	5·2	5·2	213·5	..	..	10·42
Jhelum .	209	16·1	12·1	13·8	13·3	7·0	16·3	12·4	11·2	15·0	13·3	10·2	3·3	13·4	484·9	.	..	10·08
Montgomery ...	580	28·1	32·7	32·1	24·4	19·8	18·8	19·4	19·0	19·4	14·7	14·9	16·7	22·1	799·7	..	..	33·95
Mooltan ..	729	12·1	18·4	22·1	20·0	22·3	12·9	7·1	12·0	12·3	11·7	17·9	18·2	15·1	413·0	.	.	24·69
Jhung ..	374	11·7	14·9	10·8	11·1	20·2	16·8	11·0	7·5	7·1	11·1	11·7	9·3	10·7	320·9	...	..	10·70
Dera Ghazee Khan ..	386	44·4	40·3	28·6	22·8	28·9	34·9	20·5	39·7	31·2	31·9	31·7	21·8	33·7	1741·0	..	...	25·91
Dera Ismael Khan .	351	33·1	32·4	40·0	28·7	24·0	22·9	26·2	41·9	39·3	30·6	30·1	23·7	31·3	1128·2		...	25·64
Kohat ...	171	20·8	10·7	27·0	25·5	42·9	30·4	57·5	74·1	59·5	85·5	56·6	30·5	40·9	1526·3	...	...	23·39
Bunnoo ..	127	40·0	38·2	*48·0	38·5	16·4	24·8	33·3	31·3	47·2	31·5	65·6	117·6	47·2	1196·1	.	...	39·37
Rawulpindee ...	808	62·1	171·2	66·9	88·1	20·1	22·3	20·6	25·6	30·7	25·1	21·5	13·5	40·9	1490·1	.	...	70·72
Peshawur ..	520	37·7	24·9	26·3	30·9	43·4	30·9	35·7	35·7	43·4	34·6	42·2	32·1	36·5	1365·4	...	.	30·77
	13,385	20·6	25·3	18·9	17·2	19·7	19·6	20·6	28·1	26·7	24·1	23·3	19·8	23·0	825·7	...	...	27·10
BENGAL PRESIDENCY .	57,537	29·4	27·0	25·2	24·7	24·2	23·9	26·8	31·4	34·3	37·4	36·5	31·4	29·4	927·4	1·10	33·42	34·52

JAILS OF THE BENGAL PRESIDENCY, 1871.

X.

TABLE showing the RATIO in which the PRINCIPAL DISEASES have contributed to make up the ADMISSION-RATE of the YEAR in the JAIL HOSPITALS of the BENGAL PRESIDENCY.

STATIONS.	Average Strength for the Year.	ADMITTED INTO HOSPITAL PER 1,000 OF AVERAGE STRENGTH.												Admitted per 1,000 of the Average Strength from all Causes.
		Cholera.	Fever, Intermittent.	Fever, Remittent and Continued.	Dysentery & Diarrhœa	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Phthisis Pulmonalis.	Dropsy.	Atrophy and Anæmia.	Scurvy.	All other Causes.	
Presidency	760	...	1019·5	7·8	355·0	...	54·6	13·0	37·7	...	...	...	326·4	1814·0
Allipore	2,247	20·0	692·5	1·8	503·8	·9	32·5	85·2	12·4	2·7	20·5	·4	291·5	1615·1
Baraset	282	...	716·3	28·4	418·4	...	56·7	42·6	...	7·1	7·1	3·5	237·6	1517·7
Jessore	485	2·3	1367·8	13·8	46·0	2·3	16·1	52·9	9·2	2·3	...	...	183·9	1696·6
Kishnaghur	306	...	320·3	6·5	130·7	3·3	26·1	22·9	3·3	...	3·3	...	179·7	696·1
Moorshedabad	180	...	955·5	5·6	183·3	...	50·0	...	...	...	...	...	266·7	1461·1
Hooghly	510	19·6	570·6	5·9	698·1	...	37·2	25·5	39·2	3·9	3·9	...	347·1	1749·0
Burdwan	213	...	1685·4	37·6	169·0	4·7	46·9	9·4	14·1	...	9·4	...	211·3	2187·8
Bancoorah	286	...	178·3	...	7·0	3·5	...	24·5	7·0	...	...	...	76·9	297·2
Purulea	142	7.0	232·4	7·0	119·7	...	...	21·2	7·0	7·0	14·1	...	309·9	725·3
Sooree	198	15·2	596·0	40·4	186·9	5·0	35·3	80·8	10·1	...	20·2	5·0	686·9	1681·8
Rajmehal and Pakour	134	44·8	343·0	29·8	216·4	...	7·5	22·4	...	...	...	...	74·6	738·8
Deoghur and Sub-divisions	80	...	237·5	...	137·5	...	12·5	12·5	...	...	...	...	250·0	650·0
Malda	70	75·0	606·1	12·7	430·4	12·7	104·6	38·0	...	...	...	...	367·1	1797·5
Dinagepore	349	5·7	1401·2	...	435·5	11·5	8·6	88·8	8·6	45·8	11·5	8·6	596·0	2621·8
Rajshahye	558	1·8	403·2	5·4	247·3	...	7·2	30·5	5·4	8·9	59·1	...	69·9	838·7
Rungpore	275	...	509·1	3·6	320·0	3·6	7·3	65·5	14·5	65·5	25·5	...	287·2	1301·8
Bograh	90	22·2	911·1	...	144·5	...	...	55·6	44·4	33·3	77·8	...	288·9	1577·8
Mymensingh	442	2·3	316·7	6·8	149·3	...	9·1	29·4	18·1	...	6·8	4·5	88·2	631·2
Pubna	160	...	818·8	12·5	393·7	...	75·0	75·0	...	6·2	...	12·5	1300·0	2693·7
Furreedpore	377	...	366·0	...	69·0	..	10·6	18·6	5·3	...	...	...	241·4	710·9
Backergunge	443	9·0	243·8	2·3	406·3	4·5	6·8	6·8	...	2·3	...	...	182·8	864·6
Noacolly	178	...	853·9	...	101·1	5·6	5·6	28·1	11·3	...	5·6	...	443·8	1455·0
Chittagong	236	8·5	394·0	...	156·8	...	...	63·6	...	...	12·7	4·2	203·4	843·2
Tipperah	301	...	375·4	...	142·9	...	13·3	13·3	6·6	...	6·6	...	216·0	774·1
Dacca	651	7·7	241·2	46·1	132·1	...	13·8	82·9	9·2	...	6·1	...	258·1	797·2
Sylhet	397	...	435·8	2·5	110·8	...	7·6	25·2	...	...	2·5	90·7	231·7	906·8
Shillong	38	...	789·5	...	131·6	...	26·3	26·3	...	...	...	...	763·2	1736·9
Cachar	118	...	618·6	76·3	372·9	...	25·4	33·9	8·5	...	...	...	593·2	1728·8
Gowalpara	118	25·4	703·4	...	440·7	...	8·5	93·2	33·9	...	42·4	...	898·3	2245·8
Gowhatty	100	130·0	210·0	...	400·0	...	10·0	120·0	20·0	...	40·0	...	260·0	1190·0
Seebsaugor	116	...	439·7	69·0	448·3	...	8·6	77·6	...	17·2	8·6	...	456·9	1525·9
Nowgong	90	66·7	866·7	44·4	166·7	...	33·3	11·1	...	11·1	55·6	...	188·9	1444·5
Tezpore	171	17·5	631·6	5·8	508·8	5.8	157·9	134·5	...	11·7	...	...	894·8	2368·4
Debrooghur	67	14·9	746·3	...	537·3	...	44·8	59·7	...	...	...	...	880·6	2283·6
Midnapore	981	6·1	237·5	1·0	74·4	2·0	3·1	161·1	28·5	4·1	5·1	1·0	136·6	660·5
Balasore	171	11·7	514·6	17·5	187·1	...	...	11·7	5·9	...	...	...	157·9	906·4
Cuttack	257	...	420·2	3·9	124·5	3·9	3·9	15·6	3·9	...	7·8	...	245·1	828·8
Pooree	96	...	1666·7	...	166·7	...	...	31·2	...	...	31·2	...	614·6	2510·4
Monghyr	279	3·6	71·7	...	21·5	...	...	3·6	...	...	3·6	...	86·0	190·0
Bhaugulpore	550	10·9	105·5	...	114·5	...	5·5	9·1	9·1	3·6	1·8	...	120·0	380·0
Purneah	268	...	466·4	44·8	108·2	7·5	37·3	29·9	3·7	22·4	22·4	...	302·2	1044·8
Julpigoree	92	..	434·8	...	510·9	...	10·9	54·3	32·6	21·8	54·3	10·9	239·1	1369·6
Darjeeling	49	...	102·0	...	122·5	...	...	...	20·4	...	..	...	61·2	306·1
	14,026	9·4	566·7	9·6	268·5	1·6	23·0	45·0	12·2	5·4	11·6	3·5	281·6	1238·1
Chyebassa	82	...	768·3	...	280·5	...	...	...	...	12·2	...	...	353·6	1414·6
Ranchee	169	29·6	497·1	...	420·1	...	5·9	11·8	...	5·9	35·5	...	337·3	1343·2
Hazareebaugh, Central	592	1·7	600·8	3·4	72·6	...	...	38·9	...	...	8·4	...	194·5	920·1
" District	210	...	985·7	...	195·2	...	28·6	42·9	...	...	9·5	...	300·0	1561·9
Gyah	397	...	385·4	...	342·6	..	...	40·3	10·1	...	12·6	5·0	375·3	1171·3
Patna	455	39·6	349·4	...	241·7	...	6·6	22·0	...	...	26·4	...	213·2	898·9
Dehree Ghat	461	2·2	457·7	...	145·3	2·2	2·2	15·2	2·2	6·5	2·2	...	197·3	833·0
Arrah	343	...	90·4	5·8	148·7	2·9	17·5	20·2	...	2·9	5·8	...	110·8	414·0
Chumparun	247	...	222·7	4·1	332·0	...	12·1	12·1	...	...	12·1	...	170·1	765·2
Mozufferpore	500	...	98·0	...	452·0	...	2·0	32·0	2·0	...	18·0	...	172·0	776·0
Chuprah	288	...	97·2	...	128·5	...	...	3·5	...	3·5	...	...	10·4	243·1
Ghazeepore	474	...	54·9	...	27·4	...	2·1	...	..	2·1	4·2	...	90·7	181·4
Benares, Central	1,118	...	610·9	1·8	479·4	...	4·5	8·0	1·8	·9	6·3	...	291·6	1405·2
" District	481	...	345·1	2·1	286·9	...	6·2	18·7	4·2	...	...	12·5	299·4	975·1
Mirzapore	260	...	446·2	11·5	126·9	...	3·8	7·7	...	...	...	...	173·1	769·2
Azimghur	330	...	312·7	3·0	135·7	..	...	3·0	...	3·0	8·8	...	265·4	731·6
Jounpore	265	11·3	471·7	11·3	207·5	3·8	...	30·2	3·8	...	3·8	...	162·3	905·7
Goruckpore	577	...	625·6	5·2	542·5	...	6·9	50·3	...	...	36·4	...	230·5	1497·4
Bustee	245	...	518·4	...	77·5	...	...	4·1	...	...	...	...	322·4	922·4
Gondah	610	...	177·1	21·3	77·0	...	...	29·5	4·9	...	6·6	...	254·1	570·5
Baraich	316	...	246·8	9·5	85·5	...	6·3	15·8	3·2	.	25·3	...	170·9	563·3
Fyzabad	711	...	284·1	1·4	140·1	...	...	15·5	...	..	...	...	99·8	549·0
Sultanpore	394	...	177·7	2·5	159·9	...	...	10·2	2·5	...	...	...	63·4	416·2
Rae Bareilly	350	...	402·9	14·3	165·7	...	...	...	...	...	...	...	160·0	742·9
Pertabghur	124	8·1	475·8	...	112·9	...	...	8·1	...	...	8·1	...	766·1	1379·1
Hurdui	236	...	224·6	...	105·9	...	...	33·9	...	...	25·4	...	267·0	656·8
Kheree	126	...	634·9	87·3	174·6	..	...	7·9	..	...	15·9	...	579·4	1500·0
Lucknow, Central	1,708	...	43·9	16·4	90·7	1·2	1·8	11·7	31·6	·6	66·7	...	43·9	308·5
" District	838	7·2	51·3	9·5	113.4	...	2·4	14·3	14·3	...	76·4	...	75·2	364·0
Seetapore	675	..	297·8	...	93·3	...	..	3·0	...	...	1·5	3·0	197·0	595·6
Nawabgunge	149	...	248·3	6·7	114·1	...	...	6·7	...	..	...	...	221·5	597·3
Oonao	166	...	295·2	18·1	96·4	...	...	30·1	6·0	...	12·0	...	343·4	801·2
Humeerpore	197	...	715·7	...	147·2	...	40,6	71·1	...	...	20·3	...	401·1	1396·0
Oraie	145	...	517·2	...	75·9	...	...	27·6	..	...	13·8	...	269·0	903·5
Futtehghur, Central	709	...	300·4	...	84·6	...	2·8	19·8	1·4	1·4	5·7	...	416·1	832·2
" District	333	..	486·5	39·0	291·3	...	3·0	9·0	...	...	12·0	...	507·5	1348·3

STATIONS.	Average Strength for the Year.	ADMITTED INTO HOSPITAL PER 1,000 OF AVERAGE STRENGTH.												Admitted per 1,000 of the Average Strength from all Causes.
		Cholera.	Fever, Intermittent.	Fever, Remittent and Continued.	Dysentery & Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Phthisis Pulmonalis.	Dropsy.	Atrophy and Anæmia.	Scurvy.	All other Causes.	
Cawnpore	379	...	440·6	...	195·3	...	21·1	7·9	7·9	2·6	21·1	..	340·4	1036·9
Futtehpore	259	...	830·1	..	308·9	...	15·5	57·9	...	7·7	.	7·7	324·3	1552·1
Banda	344	...	674·4	17·5	81·4	...	14·5	58·1	..	8·7	...	..	662·8	1517·4
Allahabad, Central	1,443	...	253·6	1·4	75·5	...	2·8	32·6	·7	·7	7·6	..	263·4	638·3
" District	860	...	139·6	11·6	104·6	...	2·3	11·6	1·2	...	2·3	...	129·1	402·3
Nagode	58	...	982·8	17·2	189·7	...	17·2	86·2	...	...	17·2	..	827·6	2137·9
	18,636	1·9	324·8	6·7	179·0	·3	4·2	20·3	4·9	1·0	17·0	·6	224·7	785·4
Raepore	251	...	776·9	31·9	127·5	...	.	11·9	8·0	...	4·0	4·0	515·8	1510·0
Belaspore	46	...	21·7	43·5	...	...	...	...	...	...	21·7	...	65·2	152·1
Mundla	43	...	209·3	..	...	...	...	...	...	...	...	...	93·0	302·3
Seonee	132	...	630·4	37·9	303·0	..	...	60·6	.	15·1	...		621·2	1674·2
Chindwarra	46	...	301·3	..	108·7	..	...	108·7	.	...	.	..	152·2	673·9
Baitool	53	...	188·7	18·9	18·9	..	...	18·9	..	...	..	..	75·4	320·8
Nursingpore	122	...	150·0	24·6	98·4	...	16·4	32·8		..	8·2	.	188·5	827·9
Hoshungabad	159	...	786·1	...	69·2	..	18·9	50·3	...	...	..	...	471·7	1396·2
Nimar	67	...	800·0	...	209·0	...	...	...	..	...	..	.	1044·7	2059·7
Sehore	57	...	842·1	35·1	701·8	...	...	105·3	.	...	17·5		812·1	2543·9
Nagpore	837	4·8	666·7	1·2	100·0	...	7·2	26·3	...	...	10·7	3·6	407·4	1237·8
Bandhara	62	...	483·9	96·8	290·3	...	...	64·5	.	..	...	...	967·7	1903·2
Wurdah	52	...	961·9	76·9	115·4	..	19·2	...	19·2	..	..	...	673·1	1865·4
Chanda	87	..	459·8	...	126·4	...	...	.	..	...	23·0		252·9	862·1
	2,088	1·9	653·3	22·5	167·2	·5	6·2	35·9	1·4	1·0	7·2	1·9	513·4	1412·4
Jubbulpore	491	...	389·0	22·4	279·0	..	4·1	63·1	...	...	6·1	..	230·2	993·9
Dumoh	50	...	260·0	...	120·0	...	40·0	...	...	...	20·0		280·0	720·0
Saugor	143	...	671·3	49·0	146·8	...	28·0	21·0	...	...	..	..	797·2	1713·3
Lullutpore	134	...	156·7	22·4	14·9	...	7·5	29·8	...	...	...	..	126·9	358·2
Jhansi	221	...	58·8	22·6	18·1	...	...	31·7	..	..		.	67·9	199·1
Ajmere	320	...	784·4	162·5	165·6	.	...	150·0	...		6·2	9·4	609·4	1887·5
Muttra	193	...	580·3	134·7	67·3	...	...	10·4	..	...	.	.	393·8	1186·5
Agra, Central	1,334	...	161·9	1·5	49·5	1·5	4·5	28·5	2·2	...	1·5	·8	92·2	344·1
" District	489	...	186·1	2·0	59·3	...	.	18·4	.	.	..	..	100·2	366·0
	3,395	...	298·7	31·5	100·8	·6	4·4	42·7	·9	...	2·7	1·2	221·4	704·9
Etawah	248	...	483·9	20·2	133·1	...	8·0	32·3	8·0	...	.	...	193·5	879·0
Mynpoorie	279	..	620·1	.	32·3	...	3·6	53·8	...	...	35·8	...	240·1	985·7
Etah	200	...	590·0	80·0	70·0	5·0	10·0	45·0	...	...	15·0	...	390·0	1205·0
Allyghur	526	...	298·5	5·7	45·6	...	...	9·5	1·9	1·9	1·9	..	104·6	469·6
Bolundshuhur	128	...	570·3	7·8	46·9	...	7·8	7·8	...	..	...	..	335·9	976·5
Shahjehanpore	234	...	183·7	59·8	21·4	.	...	34·2	...	...		..	132·5	431·6
Budaon	251	...	179·3	8·0	31·9	...	...	11·9	...	..	4·0	..	171·3	406·4
Bareilly, Central	1,054	...	207·9	60·7	65·5	...	..	13·3	...	1·9	3·8	...	270·4	713·5
" District	470	...	334·0	36·2	102·1	...	8·5	6·4	..	...	2·1	.	329·8	819·1
Moradabad	302	...	127·1	24·9	88·4	..	.	33·1	8·3	.	11·0	...	80·1	372·9
Almorah	163	...	306·7	...	233·1	18·4	12·3	85·9	.	...	...		484·7	1141·1
Deyrah	57	..	789·5	...	157·9	...	17·5	35·1	..	..	.	...	140·4	1140·4
Bijnore	177	...	344·6	11·3	141·2	...	11·3	84·8	...	...	11·3	...	203·4	807·9
Saharunpore	304	..	477·0	95·4	161·2	...	9·9	98·7	...	..	..	..	325·6	1167·8
Mozuffernuggur	120	..	141·7	...	50·0	...	16·7	8·3	...	...		.	166·6	383·3
Meerut, Central	989	..	568·3	21·2	249·8	1·0	2·0	54·6	...	1·0	12·1	1·0	96·1	1007·1
" District	445	...	642·7	107·9	251·7	...	...	49·4	2·2	2·2	22·5	...	256·2	1334·8
	6,007	...	401·5	38·5	122·2	·8	3·7	36·0	1·2	·8	8·0	·2	213·8	826·7
Delhi	357	..	1075·6	22·4	243·7	...	2·8	33·6	..	5·6	.	..	106·5	1490·2
Goorgaon	191	...	842·9	21·0	130·9	...	..	31·4	..	...	5·2	..	382·2	1413·6
Rohtuck	204	...	539·2	9·8	107·8	...	.	53·9	.	4·9	.		220·6	936·2
Hissar	226	...	845·1	13·3	17·7	...	13·3	70·8		...	8·8	..	137·2	1106·2
Sirsa	302	..	218·6	...	26·5	...	6·6	33·1	6·6		.	...	324·5	615·9
Kurnaul	201	.	388·1	...	10·0	...	..	31·8	.	...	19·9	.	54·7	507·5
Umballa	712	...	508·3	5·6	130·6	2·8	7·0	21·1	1·4	..	7·0	..	182·6	956·4
" Gang at Roopar	543	...	478·8	29·5	222·8	...	3·7	41·2		7·4	12·9	..	500·4	1305·7
Loodianah	222	...	306·3	22·5	148·6	...	..	22·5	...	..	45·1	.	351·4	896·4
Jullundur	383	..	122·7	...	70·5	.	...	18·3	5·2	...	5·2		211·5	433·4
Ferozepore	408	...	93·1	...	58·8	2·5	2·5	41·6	2·5	..	2·5	...	215·6	419·1
Umritsur	641	...	343·2	3·1	56·2	..	.	23·4	1·6	.	..	...	39·0	466·5
Lahore, Central	2,456	..	376·6	·8	46·8	·4	8·6	30·6	2·5	1·6	1·6	·8	90·9	567·2
" Female	184	...	1500·0	92·4	92·4	5·4	65·2	43·5	...	5·4	.	5·4	673·9	2483·6
Sealkote	404	...	292·1	...	86·6	..	...	14·9	.	.	...	...	552·0	945·6
Dhurmsalla	149	...	724·8	6·7	151·4	...	..	13·4	...	.	...	.	255·0	1154·3
Goordaspore	296	...	381·8	3·4	47·3	.	16·9	27·0	3·4	...	6·7	...	179·0	665·5
Goojranwalla	462	..	13·0	30·3	166·7	..	2·2	30·3	8·6	..	4·3		69·3	324·7
Goojrat	311	...	51·4	..	9·6	...	...	12·9	...	...	...	...	29·0	102·9
Shahpore	384	...	80·7	...	15·6	..	...	...	...	...	..	.	117·2	213·5
Jhelum	299	...	234·1	...	73·6	..	..	13·4	..	...	13·4	3·3	127·1	464·9
Montgomery	589	...	441·4	...	85·7	...	3·4	76·4	1·7	3·4	...	..	237·7	799·7
Mooltan	729	..	170·1	...	78·2	...	1·4	107·0	2·7	...	2·7	...	80·9	443·0
Jhung	374	...	157·8	5·3	72·2	...	..	2·7	.	...	...	..	82·9	320·9
Dera Ghazee Khan	386	..	689·1	5·2	165·8	...	10·4	103·6	2·6	2·6	20·7	5·2	735·8	1741·0
Dera Ismael Khan	351	...	433·0	5·7	114·0	2·9	17·1	65·5	.	2·9	..	8·5	478·6	1128·2
Kohat	171	...	479·5	52·6	87·7	...	...	52·6	...	...	...	5·9	848·0	1526·3
Bunnoo	127	..	771·7	31·5	228·3	...	7·9	..	..	...	...	7·9	448·8	1496·1
Rawulpindee	808	..	1013·6	215·9	83·3	...	9·9	27·3	2·5	1·3	3·7	.	126·6	1490·1
Peshawur	520	..	511·5	98·2	100·0	...	42·3	76·9	...	1·9	.	13·5	423·1	1265·4
	13,385	...	436·0	24·1	87·5	·5	7·2	39·1	1·8	1·3	4·2	1·3	222·7	825·7
BENGAL PRESIDENCY ..	57,537	3·0	428·0	16·8	168·6	·7	9·5	34·2	5·2	2·1	10·6	1·5	247·2	927·4

JAILS OF THE BENGAL PRESIDENCY, 1871.

XI.

TABLE showing the PREVALENCE of CHOLERA in each MONTH and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the Year.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admitted per 1,000 of Average Strength.	Total Deaths of the Year.	Died per 1,000 of Average Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Presidency	769	...	...	...	...	...	...	...	...	...	...	...	...	None	...	...	...
Allipore	2,247	2	5	6	7	6	2	4	1	2	3	7	2	47	...	13	...
Baraset	282	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jessore	435	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Kishnaghur	308	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moorshedabad	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Howrah	91	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Serampore	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hooghly	510	...	...	...	...	...	...	...	...	1	6	...	3	10	...	8	...
Burdwan	213	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bancoorah	286	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Purulea	142	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Raneegunge	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sooree	198	...	...	1	...	...	...	...	1	...	1	...	...	3	...	...	...
Rajmehal and Pakour	131	...	1	...	...	...	...	...	2	3	...	...	...	6	...	3	...
Deoghur and Sub-divisions	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maldah	79	...	2	...	...	1	...	2	...	...	...	1	...	6	...	2	...
Dinagepore	349	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...
Rajshahye	558	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Rungpore	275	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bograh	90	...	...	...	...	...	...	...	...	...	...	...	2	2	...	2	...
Mymensingh	432	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Pubna	190	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Furreedpore	377	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Backergunge	443	...	...	...	3	...	...	...	...	...	...	...	1	4	...	3	...
Noacolly	178	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chittagong	236	...	...	...	...	2	...	...	...	...	...	...	...	2	...	...	...
Tipperah	301	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dacca	651	...	1	...	1	...	...	...	...	...	3	...	...	5	...	...	...
Sylhet	897	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shillong	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cachar	118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Naga Hills	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gowalpara	118	1	...	1	...	...	...	1	...	...	...	...	...	3	...	1	...
Gowhatty	100	...	...	...	...	...	5	2	...	...	6	...	...	13	...	8	...
Seebsaugor	116	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	90	...	...	...	...	...	...	...	...	...	6	...	...	6	...	5	...
Tezpore	171	...	...	...	...	...	1	1	...	...	...	...	1	3	...	...	...
Debrooghur	67	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Midnapore	981	2	...	...	1	1	...	...	...	...	1	1	...	6	...	2	...
Balasore	171	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...
Cuttack	257	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pooree	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Monghyr	279	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Bhaugulpore	550	1	2	1	...	1	...	...	...	...	1	...	...	6	...	2	...
Purneah	268	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Julpigoree	92	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling	49	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	14,026	6	12	12	14	11	11	10	4	7	27	9	9	132	9·4	52	3·71
Chyebassa	82	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ranchee	169	...	...	...	2	...	...	2	1	...	...	...	...	5	...	...	...
Hazareebaugh, Central	592	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
„ District	210	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gyah	307	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Patna	455	...	...	1	1	1	...	...	...	...	...	15	...	18	...	4	...
Dehree Ghat	461	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Arrah	343	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumparun	247	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mozufferpore	500	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuprah	288	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ghazeepore	474	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares, Central	1,118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	481	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mirzapore	260	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Azimghur	339	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jounpore	265	...	...	...	3	...	...	...	...	...	...	...	...	3	...	2	...
Gorruckpore	577	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bustee	245	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gondah	610	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baraich	316	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	711	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sultanpore	394	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rae Bareilly	350	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pertabghur	124	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...
Hurdui	236	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kheree	126	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow, Central	1,708	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	838	...	...	...	...	...	...	...	...	...	...	3	3	6	...	3	...
Seetapore	675	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nawabgunge	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Oonao	168	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Humeerpore	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Oraie	145	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur, Central	709	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	333	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

STATIONS.	Average Strength for the Year.	Number of Admissions into Hospital in each Month. Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admissions of the Year.	Admitted per 1,000 of Average Strength.	Total Deaths of the Year.	Died per 1,000 of Average Strength.
Cawnpore	379	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehpore	259	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Banda	341	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Allahabad, Central	1,443	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	860	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nagode	58	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	18,636	...	...	1	6	2	1	2	1	...	...	19	3	35	1·9	9	·48
Sumbulpore	66	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raepore	251	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belaspore	46	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mundla	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seonee	132	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chindwarra	46	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baitool	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nursingpore	122	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hoshungabad	159	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nimar	67	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sehore	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nagpore	837	...	...	...	...	2	2	...	...	...	...	...	...	4	...	2	...
Bandhara	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wurdah	52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chanda	87	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sironcha	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2,088	...	...	...	...	2	2	...	...	...	...	...	...	4	1·9	2	·96
Jubbulpore	491	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dumoh	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	143	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lullutpore	131	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	221	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmere	320	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Beaur	28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra	193	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra, Central	1,331	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	489	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	3,395	...	...	...	...	...	...	...	...	...	...	...	...	None.	...	...	...
Etawah	248	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mynpoorie	279	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Etah	200	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Allyghur	526	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bolundshuhur	128	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahjehanpore	234	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Budaon	251	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly, Central	1,054	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	470	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	362	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Almorah	163	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deyrah	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bijnore	177	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saharunpore	304	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mozuffernuggur	120	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut, Central	989	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	445	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	6,007	...	...	...	...	...	...	...	...	...	...	...	...	None.	...	...	...
Delhi	357	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goorgaon	191	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rohtuck	204	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hissar	226	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sirsa	302	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurnaul	201	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umballa	712	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ Gang at Roopur	543	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Loodianah	222	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	383	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore	408	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	641	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lahore, Central	2,456	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ Female	184	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	404	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goordaspore	296	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goojranwalla	462	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goojrat	311	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahpore	384	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhelum	299	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Montgomery	589	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	729	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhung	374	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ghazee Khan	386	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan	351	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kohat	171	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bunnoo	127	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindee	806	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur	520	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	13,385	...	...	...	...	...	...	...	...	...	...	...	...	None.	...	...	...
BENGAL PRESIDENCY	57,537	6	12	13	20	15	14	12	5	7	27	28	12	171	3·0	63	1·10

JAILS OF THE BENGAL PRESIDENCY, 1871.

XII.

TABLE showing the MORTALITY in each JAIL, the CAUSES of DEATHS, and the RATIO of DEATHS to STRENGTH.

JAILS.	Average Strength for the Year.	Causes of Deaths.															Total Deaths of the Year.	Died per 1,000 of the Average Strength.		
		Cholera.	Smallpox.	Fevers.	Apoplexy.	Dysentery and Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Presidency	709	...	...	2	...	1	...	...	...	...	2	...	...	...	...	1	6	...	...	7·80
Allpore	2,247	13	...	4	...	50	...	...	16	2	23	2	...	3	...	12	125	5·79	49·84	55·63
Barasat	282	...	...	4	...	12	...	...	2	...	...	...	...	2	...	2	22*	...	...	78·01
Jessore	435	...	...	4	...	4	2	...	2	1	1	...	...	...	...	4	18	...	...	41·38
Kishnaghur	306	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...	6·54
Moorshedabad	180	...	...	2	...	1	...	1	...	...	...	...	...	...	1	...	5	...	...	27·78
Howrah	91	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	10·98
Serampore	33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hooghly	510	8	...	2	1	25	...	...	1	...	2	1	...	...	...	...	40	15·69	62·74	78·43
Burdwan	213	...	...	5	...	4	1	...	...	...	...	...	...	1	...	2	13	...	...	61·03
Bancoorah	286	...	...	...	...	1	...	...	1	...	2	...	...	...	...	...	4	...	...	13·99
Purulea	142	1	...	1	...	2	...	...	...	...	...	...	...	...	...	1	5	7·04	28·17	35·21
Raneegunge	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sooree	198	...	...	...	...	2	...	...	...	...	1	1	...	1	...	...	5	...	...	25·25
Rajmehal and Pakour	134	3	...	2	...	1	...	...	...	...	...	...	...	...	...	...	6	22·39	22·39	44·78
Deoghur and Sub-Divisions	80	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	12·50
Malda	79	2	...	1	...	1	1	2	...	...	...	...	...	...	...	...	7	25·32	63·29	88·61
Dinagepore	349	...	...	6	...	4	...	...	3	...	3	2	...	...	...	3	21	...	...	60·17
Rajshahye	558	...	...	3	2	18	...	1	5	1	2	1	...	2	...	...	35	...	...	62·72
Rungpore	275	...	...	1	1	7	1	1	2	...	1	2	...	2	...	...	18	...	...	65·45
Bogra	90	2	...	...	...	2	...	...	...	...	1	...	...	4	...	1	10	...	...	111·11
Mymensingh	442	...	...	...	...	1	...	...	4	...	5	...	...	2	...	...	12	...	...	27·15
Pubna	160	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	6·25
Furreedpore	377	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...	...	5·31
Backergunge	443	3	...	1	...	22	...	1	1	1	...	...	...	...	1	...	30	6·77	60·95	67·72
Noacolly	178	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	5·62
Chittagong	236	...	...	...	...	...	...	...	3	1	...	...	...	2	...	2	8	...	...	33·90
Tipperah	301	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	3	...	...	9·97
Dacca	651	...	...	3	...	2	...	2	6	...	2	...	...	2	...	1	18	...	...	27·65
Sylhet	397	...	...	4	...	5	...	...	2	...	...	...	...	...	...	1	12	...	...	30·23
Shillong	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cachar	118	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	...	...	16·95
Naga Hills	8	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Gowalparah	118	1	...	...	...	2	...	...	...	...	1	...	...	1	...	1	6	8·47	42·38	50·85
Gowhatty	100	8	...	2	...	4	...	...	2	...	1	...	...	...	...	1	18	80·00	100·00	180·00
Seebsaugor	116	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...	17·24
Nowgong	90	5	...	2	...	...	...	...	...	...	...	1	...	2	...	...	10	55·55	55·55	111·11
Tezpore	171	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2	...	...	11·70
Debrooghur	67	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	14·93	...	14·93
Midnapore	981	2	...	...	...	3	1	...	6	1	7	1	...	1	...	...	22	2·04	20·39	22·43
Balasore	171	...	...	1	...	1	...	...	1	...	1	...	...	...	...	...	4	...	...	23·39
Cuttack	257	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	7·78
Pooree	96	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	10·42
Monghyr	279	1	...	...	...	3	...	...	...	...	...	...	...	2	...	2	8	3·58	25·09	28·67
Bhaugulpore	550	2	...	...	...	19	...	...	3	...	3	1	...	1	...	2	31	3·64	52·72	56·36
Purneah	268	...	...	...	...	1	...	2	1	...	3	...	...	1	...	2	10	...	...	37·31
Julpigoree	92	...	...	1	1	12	...	...	...	...	...	...	...	1	...	...	15	...	...	163·04
Darjeeling	49	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	20·41
	14,026	52		53	6	219	7	10	61	8	63	12	..	33	4	39	567	3·71	36·71	40·42
Chyebassa	82	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ranchee	169	...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	4	...	...	23·67
Hazareebaugh, Central	592	...	...	2	1	2	...	...	1	...	...	1	...	2	...	4	13	...	...	21·96
" District	210	...	...	...	...	2	...	...	3	...	...	...	...	1	...	...	6	...	...	28·57
Gyah	397	...	...	...	...	9	...	...	...	...	2	...	1	2	...	...	14	...	...	35·26
Patna	455	4	...	...	...	2	...	...	...	...	1	...	...	...	1	1	9	8·79	10·99	19·78
Dehree Ghat	461	...	...	...	...	4	...	...	1	...	...	2	...	...	2	1	10	...	...	21·69
Arrah	343	...	...	...	...	2	...	...	1	...	...	...	...	...	...	1	4	...	...	11·66
Chumparun	247	...	...	1	1	15	...	1	...	...	...	...	...	2	...	...	20	...	...	80·97
Mozufferpore	500	...	...	...	1	52	...	1	2	...	1	...	...	3	...	1	61	...	...	122·00
Chuprah	288	...	...	1	...	3	...	...	...	...	...	1	...	...	...	...	5	...	...	17·36
Ghazeepore	474	...	...	1	...	3	...	...	...	...	...	1	...	2	...	1	8	...	...	16·88
Benares, Central	1,118	...	...	1	...	36	...	1	4	...	4	...	...	...	...	4	50	...	...	44·72
" District	481	...	...	...	1	9	...	...	2	...	2	...	...	...	...	3	17	...	...	35·34
Mirzapore	299	...	...	1	1	7	...	...	2	...	...	...	...	...	1	...	12	...	...	40·13
Azimghur	339	...	...	...	...	3	...	...	1	1	...	...	...	1	1	1	8	...	...	23·60
Jounpore	265	2	...	1	...	5	...	...	2	...	1	...	...	...	...	...	11	7·55	33·96	41·51
Goruckpore	577	...	...	1	...	32	...	3	3	...	...	...	...	3	...	1	43	...	...	74·52
Bustee	245	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gondah	610	...	...	...	...	2	...	...	1	1	1	...	...	2	...	1	8	...	...	13·11
Baraich	316	...	...	1	...	...	1	...	2	...	...	...	...	...	...	1	5	...	...	15·82
Fyzabad	711	...	...	...	...	8	...	...	...	...	...	...	...	...	...	3	11	...	...	15·47
Sultanpore	394	...	...	...	...	9	...	...	3	...	1	...	...	1	...	...	14	...	...	35·53
Rae Bareilly	350	...	...	1	...	4	...	...	...	1	...	...	...	...	...	1	7	...	...	20·00
Portabghur	124	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	4	...	...	32·26
Hurdui	236	...	...	...	...	2	...	...	3	...	...	...	...	...	2	2	9	...	...	38·13
Kheree	126	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...	15·87
Lucknow, Central	1,708	...	...	...	...	17	...	...	...	1	21	1	...	11	...	9	60	...	...	35·13
" District	838	3	...	...	...	8	...	...	...	1	4	...	...	5	...	6	27	3·58	28·64	32·22
Seetapore	675	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	3	...	...	4·44
Nawabgunge	149	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...	13·42
Oonao	166	...	...	...	...	1	...	...	1	1	1	...	...	...	...	...	4	...	...	24·10
Humeerpore	197	...	...	...	...	8	...	1	2	...	...	...	...	...	...	2	13	...	...	65·99
Oraie	145	...	...	...	1	2	...	...	...	...	...	...	...	2	...	2	7	...	...	48·28

* Chiefly invalid prisoners sent for change from Allpore Jail.

JAILS.	Average Strength for the Year.	Causes of Deaths.															Total Deaths of the Year.	Died per 1,000 of the Average Strength.		
		Cholera.	Smallpox.	Fevers.	Apoplexy.	Dysentery and Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Futtehghur, Central	709	...	...	...	...	5	...	.	1	..	...	1	...	2	1	[illegible]	10	...	.	14·10
„ District	333	..	...	...	1	6	..	...	...	...	...	..	..	...	...	1	8	..	...	24·02
Cawnpore	379	...	...	...	...	9	...			..	3	2	...	3	...		17	...	...	44·86
Futtehpore	259	..	...	...	..	7	...	...	.	...	...	2	.	...	...	...	9	...	..	34·75
Banda	344	...	...	1	..	4	...	..	8	..	...	1	...	...	...	4	18	...	...	52·33
Allahabad, Central	1,443	..	..	3	...	14	...	...	11	...	1	...	...	...	..	6	35	...	...	24·26
„ District	860	...	...	2	.	16	..	..	6	...	1	..	...	..	2	4	31	...	...	36·05
Nagode	58	...	...	...	...	1	...	...	.		...	...	..	..	...	..	1	...	...	17·24
	18,636	9	...	21	7	315	1	7	60	6	41	12	1	41	10	63	600	·48	31·72	32 20
Sumbulpore	68	...	...	..	...	1	...	.	1	...	.		..	...	...	1	3	..	...	...
Raepore	251	..		.	..	1	..	...	.	...	4		..	..	..	..	5	...	...	20·00
Belaspore	46	...	...	1	...	...	...	.	...	...	.	.	...	1	...		2	...	...	...
Mundla	43	...	...	...	...	..	...	...	.	...	...	.	..	...	...	..	..	...	...	...
Seonee	132	...	..	2	...	3	...		1	.	..	1	..	...	..	1	8	..	...	60·60
Chindwarra	46	...	...	..	...	...	...	...	1	.	..	.	..	..	...	.	1	...	...	...
Baitool	53	..	...	...	1	...	.			..	.		1	..	1	...	3	..	...	...
Nursingpore	122	...	...	1	...	1	...	...	...	1	...	..	...	...	2	...	5	.	...	40·98
Hoshungabad	150	...	...	...	...	3	.	.	.		..	...	...	...	...	..	3	..	...	18·87
Nimar	67	.	...	...	...	2	..	.		..	.			...	...	...	2	..	...	...
Sehore	57	...	...		...	...	..	..	..		...		...	..	...	1	1	...	...	...
Nagpore	837	2	...	1	.	11	.	1	2	.	..	..	1	.	...	1	19	2·39	20·31	22·70
Bandhara	62	...	...	1	...	.	..	.	1	..		..	...		...	..	2	...	...	...
Wurdah	52	...	...	1	..	...		...	..		...	.	...		1		2	...	...	...
Chanda	87	..	...	.	...			..	...	...	...		.	..	...	...	.	.	..	...
Sironcha	8	.	.	.	...	.	..	..	.	..	..		...	.	..	..		..	...	...
	2,088	2	..	7	1	22		1	6	1	4	1	2	1	4	4	56	·96	25 86	26·82
Jubbulpore	491	.	..	1	1	6	..	...	3	..	...	..	1	...	2	1	15	...	...	30·55
Dumoh	50	...	..	...	...	..	..	...	...	.	...	.	.	...	...	...	...	..	...	...
Saugor	143	..	...	...	..	1	...	..	..	.	.	1	...	..	...	..	2	...	...	14·00
Lullutpore	134	..	...	..	..	...	...	...	1			..	...	...	...	1	2	...	...	14·93
Jhansi	221	...	...	.	..	4	.	..	2	..	...	.	.	...	...	.	6	...	..	27·15
Ajmere	320	..	...	8	...	2	..	..	3	...	..	1	.	...	...	.	14	...	...	43 75
Beaur (9 months)	28	...	...	...	...	..	...	...	...	...	...	...	...		..	...	...	...	...	...
Muttra	193	.	...	..	...	...	..	..	1	..		.	..	.	.	1	2	.	.	10·36
Agra, Central	1,331	...	..	...		7	1	..	3	1	1		...	...	2	4	19	...	...	14·24
„ District	480	...	...	.	1	3	.	..	2	..	.	.			.	1	7		..	14 31
	3,305	...	..	9	2	23	1	...	15	1	1	2	1		4	8	67	...	..	19·73
Etawah	248	...	...	..		3	..	...	1	..	1	.	..	...	.	...	5	...	...	20·16
Mynpoorie	279	.		..	.	.	..	..	.	.	.	..		1	..	...	1	...	...	3·58
Etah	200	..	...	3	..	1	...	...	1	...	...	.	..	..	...		5	...	...	25·00
Allyghur	520	.	...	2	...	..	...	..	1	..	1	...	...	...	..	...	4	...	...	7 60
Bolundshuhur	128	...	...	1	...	3	.	...	.	..	.	..	...	...	...	.	4	...	...	31·25
Shahjehanpore	234	..	...	3	..	..	...	.	.	.	.	..	..	...	.	...	3	...	...	12·82
Budaon	251	...	...	.	..	1	.	...	.	...	...	..	.	..	..	1	2	..	...	7·97
Bareilly, Central	1,054	..	...	29	2	7	...	.	4	1	..	1	..	5	.	..	49*	..	..	46·49
„ District	470	..	...	6	..	3	...	.	...	..	.	..		..	...	3	12	.	...	25·53
Moradabad	302	...	..	3	...	5	...	..	2	.	1	.	...	1	..	1	13	..	..	35·91
Almorah	163	.	...	.	.	6	..	1	..	.	.	.	...	...	...	.	7	..	...	42 94
Deyrah	57	...	..	..	..	1	...	...	...		..	...	..	1	.	..	2	.	...	35·09
Bijnore	177	...	.	..	..	1	...		3	..	..	...	.	...	...	1	5	...	...	28·25
Saharunpore	304	...	..	2	..	9	.	...	5		..	..	...	..	1	1	18	..	...	59·21
Mozuffernuggur	120	.	.	1	...	2	...	.		1	..	.	..	.		1	5	...	...	41·67
Meerut, Central	989	...	...	25	.	103	...	.	12	1	...		..	6	..	6	153	.	...	154·70
„ District	415	..	..	6	.	31	.	.	3	..		1	.	...		3	41	..	...	98·88
	6,007	...	...	81	2	176		1	32	3	3	2	...	14	1	17	332	...	..	55·27
Delhi	357	...	...	4	...	13		.	2	.	...	.	..	..	.	2	21	...	...	58·54
Goorgaon	191		...	...		1	..	..	1	...	...	1	...	...	1	1	5		..	26 18
Rhotuck	204	..	..	2	..	1	...	...		...	.	1	...	...		1	5	...	...	24·51
Hissar	226	...	..	2	...	2	..	..	1	...	...	..	.		.	.	5	.	...	22·12
Sirsa	302	...	1	...	...	..	.	..	4	...	..	..	...	.	..	1	6	...	...	19 87
Kurnaul	201	...	...	..	.	.	...	...	2	.	...	...	...	..	...	..	2	...	...	9 95
Umballa	712	..		3	...	15	..	..	1	...	1	...	..	1	..	4	25	..	...	35·11
Roopar	543	...	..	10	5	18	..	...	5	..	...	..	...	...	2	8	48	...	...	88·40
Loodianah	222	...	...	2	...	3	...	..	2	...	..	.	...	3	..	...	10	...	..	45·05
Jullundur	383	...	..	...	...	1	...	..	1	...	2	...	..	...	1	.	5	...	...	13·05
Ferozepore	408	..	...	...	..	..	..		1	...	1	...	.	1	1	1	5	...	...	12·25
Umritsur	641	...	...	1	1	1	...	.	3	.	..	..	..	..	...	..	9	..	.	14·04
Lahore, Central	2,456	..	..	3	...	10	1	2	11	..	4	1	...	..	...	2	37	...	...	15 07
„ Female Jail	184	..	...	1	...	2	...	...	2	...	..	1	...	...		..	6	...	...	32·61
Sealkote	404	...	...	1	..	..		...	.	...	..		..	...	.	..	1	...	...	2·48
Dhurmsalla	149	...	...	2	...	2	...	...	.	...	.	..	..		..	...	4	...	..	26·85
Goordaspore	296	...	..	..	1	...	..	...	3	..	...	..	.	...	1	2	7	..	...	23·65
Goojranwalla	462	..	...	..	..	1	...	.	1	..	1	.	..	2	..	2	7	..	..	15·15
Goojrat	311	...	...	...	1	2	.	.	2	..	...	...	..	1	..	...	6	...	...	19·29
Shahpore	384	...	...	...	1	2	...	..	.		...	...	.	.	...	1	4	..	...	10·42
Jhelum	299	...	...	.	...	3	...	...	...		.	..	...	..	..	..	3	.	...	10·03
Montgomery	589	...	...	7	...	..	..	1	11	..	..	...	...	..	1	..	20	..	...	33·95
Mooltan	729	...	1	1	1	1	...	..	12	...	1	..	.	...	...	1	18	...	...	24·69
Jhung	374	...	...	1	...	...	...	..	...	...	...	..		1	1	1	4	...	..	10·70
Dera Ghazee Khan	386	...	...	3	...	...	..	...	5	..	1	...		...	...	1	10	..	...	25·91
Dera Ismael Khan	351	...	...	2	...	1	...	..	4	...	...	1	...	..	...	1	9	..	..	25 64
Kohat	171	...	..	2	1	1	...	...	..	...	..	...	.	...	...	..	4	...	.	23·39
Bunnoo	127	...	...	3	...	1	...	.	1	.	..	...		...	...	...	5	.	..	39·37
Rawulpindee	806	...	...	48	1	5	...	2	..	...	...	.	..	1	...	...	57	..	...	70·72
Peshawur	620	...	...	3	1	1	..	...	2	1	...	.	...	...	4	4	16	...	..	30·77
	13,385	.	2	101	13	90	1	5	80	1	11	5	...	10	12	33	364	..	..	27 19
Bengal Presidency	57,587	63	2	272	31	845	10	24	254	20	126	34	4	103	35	164	1,986	1 10	33·42	34·52

---

* Eleven prisoners in the Bareilly Jail were killed during an outbreak, or died shortly afterwards from their wounds.

JAILS OF THE BENGAL PRESIDENCY, 1871.

XIII.

DETAIL of the ADMISSIONS and DEATHS of the JAIL POPULATION of each PROVINCE.

(A Summary of the Annual Returns of the Jails of the Presidency.)

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROPER AND ASSAM. Strength ... 14,026 Admissions ... 17,260 Deaths ... 567		CHOTA NAGPORE, BEHAR PROVINCES, BENARES, OUDE, AND CAWNPORE. Strength ... 18,636 Admissions ... 14,661 Deaths ... 602		CENTRAL PROVINCES (EXCLUDING JUBBULPORE AND SAUGOR.) Strength ... 2,088 Admissions ... 2,952 Deaths ... 56		AGRA AND CENTRAL INDIA. Strength ... 3,395 Admissions .. 2,395 Deaths .. 67		MEERUT AND ROHILCUND. Strength ... 6,067 Admissions ... 4,987 Deaths ... 332		PUNJAB. Strength ... 13,385 Admissions ... 11,047 Deaths ... 304	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Cholera	132	52	34	9	4	2	...		...	...	...	...
Smallpox	2	...	20	...	1		...		2	...	15	2
Chickenpox	12	...	13	...		...	...		1	...	2	...
Measles	8	...	2	...	...	...	...		2	...	5	...
Mumps	12	...	84	...	4	...	2		10	...	4	...
Influenza	8		8	...	3	...	...		...	...	7	...
Pyæmia	...	...	1	...	...	...	...		...	...	...	...
Erysipelas	10	1	19	6	1	...	5		8	2	58	6
Gangrene and Phagedæna	5	2	34	6	...		...	...	3	...	1	1
Intermittent Fever	7,822	25	6,107	8	1,349	1	906		2,401	13	5,819	21
Remittent and Continued Fever	234	27	136	12	64	6	125	9	248	68	340	80
Enteric Fever	1	1	4	1	...		...		...	...	...	...
Rheumatism, Acute	122	1	126	...	77	...	15	1	61	...	83	...
„ Chronic	155		43	...	9		15		9	...	20	...
„ Muscular	123	...	86	...	12	...	8		5	...	20	...
Leprosy	30	3	21	3	4	...	4	1	3	1	2	...
Elephantiasis	8	...	1	...	...	...	...	...	...	...	2	...
Primary Syphilis	135	...	143	...	37	...	25	...	35	...	36	...
Secondary Syphilis	92	...	82	1	16	...	15		30	3	57	...
Cancer	1	...	1		1	...	...		...	1	2	1
Scrofula and Tuberculosis	21	7	17	2	2	...	...		6	1	6	...
Phthisis Pulmonalis	145	63	88	14	3	4	3	1	7	3	20	11
Hæmoptysis	30		7		...		...		...		5	
Anæmia	74	...	15	...	8	...	...		1	...	26	...
General Dropsy	58	9	11	10	2	1	...	2	1	...	8	3
Cancrum Oris	...	1	1	1	...	...	...		...	...	...	...
Scurvy	49	...	12	1	4	2	4	1	1	...	18	...
Encephalitis	...	1	1	2	1	...	...		...	3	...	...
Apoplexy and Insolation	9	6	10	7	1	1	4	2	2	2	40	13
Paralysis	10	3	5	...	2	...	3	2	2	1	7	1
Meningitis	1	1	...	...	...	...	1	1	6	...	...	...
Tetanus	2	1	8	7	1	1	...		1		2	2
Epilepsy	26	3	18	2	2	...	...		8	...	18	2
Hysteria	4		1	...	...	...	...		...	...	...	...
Chorea	...		1	...	...	...	...		...	...	1	...
Anæsthesia	1	...	...	...	...		...		...	...	...	...
Neuralgia	33	...	38	...	5	...	5		12	...	27	...
Mania	18	...	36	2	4	...	1		13	...	17	...
Melancholia	...	...	2	...	...	...	...		...	...	...	...
Dementia	17	...	3	...	...	...	...		3	...	4	...
Amaurosis and Cataract	...	...	2		1	...	3		2		14	...
Nyctalopia	2	...	...	...	...	...	...		1	...	...	...
Ophthalmia	143	...	223	...	33	...	54		70	...	184	...
Otitis	27	...	22		14	...	...		9	...	21	...
Epistaxis	9	...	2	...	1	...	...	...	...	...	7	...
Ozæna	...	...	9	1	1		...	...	3	...	2	1
Pericarditis	3	2	2	1	...	...	...	...	...	...	1	...
Valve Disease of Heart	10	4	...	3	...	...	...	...	1	2	...	1
Hypertrophy of Heart	6	3	...	...	...	1	1	1	...	...	...	...
Fatty Degeneration of Heart	1	1	2	3	...	...	...		2	1	...	...
Rupture of Vena Cava		...	1	1	...	...	...	...	...	...	...	...
Palpitation	1	...	...	...	...	...	...	...	...	...	...	...
Syncope	2	...	...	...	...	...	...	...	...	...	...	...
Embolism	...	...	...	1	...	...	...	...	...	...	...	...
Phlebitis	10	...	...	...	...	...	...	...	...	...	...	...
Varicose Veins	...	...	1	...	...	...	...	...	...	...	...	...
Glandular Inflammation	76	...	21	...	7	...	4	...	11	...	13	...
Laryngitis	4	...	4	...	...		...	...	2	1	1	...
Bronchitis	231	1	158	7	45	3	48	3	102	12	105	7
Asthma	73	2	71	4	8		5		15	...	23	1
Pneumonia	242	52	80	44	16	3	31	10	64	17	226	67
Gangrene of Lungs	...	2	1	2	...	...	...	...	...	...	...	...
Pleurisy	57	4	41	3	5		57	2	31	2	57	5
Aphtha	6	...	...	...	...	...	1	...	...	...	...	...
Odontalgia	9	...	10		6	...	7		3	...	4	...
Stomatitis	43	...	3	...	2	...	1		3		2	...
Tonsillitis	4	...	9	...	3		2	...	3	...	12	...
Gastritis	1	1	...	...	1	...	...	...	...	...	7	...
Enteritis	3	1	7	5	1	...	1	1	...	...	6	6
Peritonitis	4	2	4	4	...	...	1	1	2	1	6	4
Hernia	10	...	2	...	...	...	...		...	...	4	...
Ileus	2	1	1	2	...	...	...		...	...	...	1
Hæmatemesis	5	2	2	1	5	...	...	...	...	...	1	...
Melæna	1	...	...	...	1	...	...	...	...	...	1	...
Dyspepsia	551	...	83	...	18	...	12	...	25	...	167	...
Colic	152	...	133	...	57	...	85		44	...	229	...
Constipation	143	...	48	...	34	...	2	...	2	...	25	...
Dysentery	2,038	166	1,943	240	164	13	226	19	454	120	686	48
Diarrhœa	1,723	58	1,365	75	188	9	113	4	284	56	484	42
Hæmorrhoids	55	...	40	...	5	...	5	...	11	...	28	...
Fistula in ano	11	1	5	...	...	...	1	...	2	...	8	...
Perinæal Abscess	...	...	...	...	...	...	...	...	...	1	...	...
Worms, Ascarides	2	...	2	...	...	...	...	...	1	...	1	...
„ Tape worm	3	...	1	...	...	...	1	...	1	...	8	...
Spleen enlargement	326	10	78	7	13	1	15	...	22	1	100	5
Rupture of Spleen	...	...	...	1	1	2		...	...	...	...	...
Hepatitis	21	7	7	1	1	...	2	1	3	...	6	1

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROPER AND ASSAM.		CHOTA NAGPORE, BEHAR PROVINCES, BENARES, OUDE, AND CAWNPORE.		CENTRAL PROVINCES (EXCLUDING JUBBULPORE AND SAUGOR.)		AGRA AND CENTRAL INDIA.		MEERUT AND ROHILCUND.		PUNJAB.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Cyst of Liver	...	...	...	1	...	...	...	...	...	...	...	...
Cirrhosis	...	...	2	...	...	...	...	...	...	...	...	...
Jaundice	40	...	34	1	2	...	11	...	20	...	13	...
Ascites	15	3	6	2	...	...	...	...	1	2	9	2
Nephritis	2	2	5	3	1	1	...		1	...	7	1
Calculus and Lithiasis	3	...	2	1	...	...	...	...	...	...	2	...
Cystitis	7	2	2	...	...	...	1	...	1	1	1	1
Hæmaturia	4	...	2	...	...	...	...		...	...	...	...
Diuresis and Diabetes	...	1	2	1	...	...	1	...	...	...	1	...
Enuresis	...	...	...	...	...	...	...	...	...		2	...
Ischuria	4	...	2	...	...	...	...	...	...	...	...	...
Stricture of Urethra	23		7	4	7	...	1	...	1	...	2	...
Urinary Abscess	6	...	...	...	...	...	...	...	...	...	...	1
Gonorrhœa	49	...	31	...	10	...	5	...	5	...	35	...
Phimosis	14	...	18	...	5	...	1	...	1	...	5	...
Warts	...	...	1	...	...	...	...	...	...	...	...	...
Orchitis	39	...	22	...	6	...	...	...	6	...	20	...
Hydrocele	25		9	...	6	...	...	...	1	...	2	...
Periostitis	3	...	8	...	...	...	...	...	...	...	1	...
Caries	1	...	4	...	...	...	...	...	...	...	...	...
„ „ of Spine	...	...	...	1	...	...	...	...	...	...	...	...
„ of Mastoid Cells	...	...	...	...	...	...	...	...	...	1	...	...
Necrosis	2	...	5	1	1	...	2	...	1		...	...
Synovitis and Bursal Inflammation	11	...	10	1	1	...	3	...	4	...	6	...
Phlegmon and Abscess	282	...	680	3	187	...	75		347	1	590	2
Ulcer	236	...	618	...	250	1	162	1	170	...	275	1
Whitlow	34	...	28	...	10	...	8	...	9	...	32	...
Carbuncle	16	...	12	...	...		5	...	6		6	...
Boils	79	...	135	...	71		32		13	...	163	...
Itch	190	...	188	...	35	...	14	...	21		121	...
Urticaria	4	...	3	...	5	...	2	...	5	...	5	...
Eczema	[illegible]	...	22	...	1	...	5	...	5	...	7	...
Herpes	17	...	30	...	10	...	12	...	10	...	5	...
Impetigo	1	...	5	...	...	...	2	...	...	...	3	...
Psoriasis	23	...	23	...	...	...	4	...	...	...	...	...
Prurigo	3	...	...		...	...	1	...	...	...	2	...
Other Skin Diseases *	14	...	10	...	3	...	3	...	4		1	...
Guinea Worm	...	...	2	...	3	...	37	...	2		97	...
Tumour	5		5		...	...	1	...	...	...	8	...
Childbirth	8	...	12	...	2	...	8		...	...	16	...
Abortion	4	...	1	...	...	...	...	...	3	...	2	1
Hæmorrhage after Childbirth	...	...	2	...	...	...	...	...	1	...	1	...
Menorrhagia	7	...	4	...	...	...	1	...	...	...	...	...
Leucorrhœa	1	...	...		...	...	...	...	...	...	...	...
Uterine Ulceration	...	...	...	...	...	1	...	...	...	...	1	...
General Debility	86	33	261	44	7	1	11	...	48	14	35	10
Delirium Tremens	...	...	2	...	...	...	...	...	...	...	...	...
Poisoning	1	...	2	1	...	1	...	...	...	...	6	2
Burning	29	...	29	...	5	...	1	...	12	...	16	...
Wound and Contusion	425	3	579	5	51	...	64	3	157	1	302	9
Concussion of Brain	...	...	2	...	...	...	1	...	...	...	...	...
Fracture	32		110	...	1	...	12		51	...	28	...
Dislocation	6	...	9	...	...	...	1		1	...	5	...
Sprain	23		16	...	18		1	...	3	...	1	...
Snake-bite	4	...	1	1	...	...	...	...	1	...	1	...
Suicide and Suicidal Wounds	11	1	7	2	...	1	...	1	2	...	1	1
Amputations	...	...	1	...	...	...	1	...	...	...	...	...
Blisters of Feet	3	...	...	...	...	...	...	...	...	...	...	...
Punished*	9	...	21	...	6	...	1	...	11		12	...
Cause not ascertained	...		...	...	1	...	1		...	...	1	1

* Cases of Punishment are returned from certain jails only as Admissions into Hospital.

GENERAL SUMMARY FOR 1871.

DETAIL of the CAUSES of the ADMISSIONS and DEATHS of the EUROPEAN ARMY of INDIA, and of the NATIVE ARMY and JAIL POPULATION of the BENGAL PRESIDENCY.

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL AND DIED IN AND OUT OF HOSPITAL.											
	ARMY OF BENGAL.		ARMY OF MADRAS.		ARMY OF BOMBAY.		ARMY OF INDIA.		NATIVE ARMY OF BENGAL.		JAIL POPULATION OF BENGAL.	
	Strength ... 35,071 Admitted . 51,954 Died ... 626		Strength ... 10,673 Admitted . . 12,759 Died ... 218		Strength ... 10,740 Admitted ... 16,142 Died ... 152		Strength ... 56,484 Admitted ... 80,855 Died ... 996		Strength ... 54,377 Admitted ... 72,037 Died ... 828		Strength ... 57,537 Admitted ... 58,302 Died ... 1,988*	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Cholera ..	65	25	76	36	2	1	143	62	55	34	170	63
Smallpox ...	10	1	3	...	...	...	13	1	35	2	40	2
Chickenpox .	2	...	...	...	...	...	2	...	18	...	28	...
Measles .	10	...	5	1	...	...	15	1	72	1	17	...
Hooping Cough .	1	...	...	...	...	. .	1	...	2	...	...	...
Mumps ..	8	...	13	...	3	...	24	...	151	...	118	...
Influenza .	87		18	...	20	. .	125	...	280	...	26	...
Dengue Fever .	..	...	...	...	222	...	222	...	...	...	...	...
Diphtheria ..	1	.	...	...	1	1	2	1	...	...	...	...
Scarlet Fever	7	. .	2	...	...	...	9	...	...	...	...	...
Pyæmia	1	..	...	...	1	1	2	1	1	1	1	...
Hydrophobia	4	4	1	1	...	...	5	5	1	1	...	...
Erysipelas ...	67	3	20	1	10	...	97	4	31	4	101	15
Gangrene and Phagedæna .	...	...	...	...	...	...	...	...	4	1	43	9
Intermittent Fever ..	11,708	...	965	...	5,592	1	21,245	1	34,436	70	24,491	68
Remittent and Continued Fevers ...	5,811	79	829	9	1,843	10	8,483	98	877	98	1,146	202
Enteric Fever ..	129	60	41	16	23	16	193	92	1	1	5	2
Typhus Fever	...	...	...	...	...	...	...	...	4	1	...	...
Rheumatism, Acute ..	679	1	125	1	190	..	994	2	648	4	484	2
„ Chronic ...	830	.	203	...	143	...	1,176	.	1,090	...	251	...
„ Muscular ..	418	.	117	. .	139	...	704	. .	773	...	248	...
Gout	. .	...	...	..	1	...	1	...	2	...	...	...
Leprosy	...	...	...	...	...	..	...	...	13	...	64	8
Elephantiasis .	...	...	...	...	...	...	...	...	...	...	11	...
Scurvy ...	14	1	2	..	5	1	21	2	156	4	88	4
Anæmia ..	233	...	67	...	77	...	377	...	141	6	164	...
General Dropsy ...	11	. .	2	...	15	...	28	...	9	...	80	25
Cancrum Oris	.	...	...	...	..	...	...	...	2	2	1	2
Lupus .	3	...	..	. .	...	...	3	..	...	.	...	...
Cancer	9	6	1	..	1	1	11	7	2	1	5	2
Primary Syphilis .	2,572	.	597	.	654	...	3,823	..	784	...	411	...
Secondary Syphilis .	849	2	383	1	270	. .	1,502	3	263	..	301	4
Phthisis Pulmonalis .	306	59	128	13	91	16	525	88	138	47	266	126
Hæmoptysis . .	17	...	9	...	9	. .	35	.	21	...	42	
Psoas Abscess	...	...	...	...	...	...	...	..	..	.	..	...
Hip-joint Disease	3	1	...	...	...	...	3	1	. .	. .	...	...
Scrofula and Tuberculosis ...	16	...	10	...	6	...	32	...	21	...	52	10
Encephalitis .	12	2	5	4	3	4	20	10	14	10	2	6
Apoplexy .	13	8	3	4	6	5	22	17	15	9	66	31
Sunstroke	48	24	19	4	32	11	99	39				
Paralysis .	51	...	14	...	9	1	74	1	52	5	20	7
Meningitis .	17	8	6	1	6	2	29	11	2	1	8	2
Myelitis .	...	1	..	...	...	...	..	1	...	..	...	...
Tetanus .	1	1	1	1	. .	.	2	2	4	3	14	11
Epilepsy .	97	...	34	...	13	..	144	. .	38	2	72	7
Hysteria	1	.	...	...		...	1	...	...	...	5	...
Paralysis Agitans ...	.		...		...	..	...	. .	1		...	. .
Chorea	1	...	.	...	.	...	1	. .	1	..	2	...
Anæsthesia	. .		2	...	...	...	2	...	5	.	1	...
Hyperæsthesia	.	..	..	..	...	...		..	1	...	...	...
Neuralgia ...	251	..	105	..	84	...	440	...	468	. .	120	...
Mania ...	24	..	8	.	6	...	38	...	25	2	119	2
Dementia	48	..	16	.	13		77	...	7	..	27	...
Melancholia	33	...	12	...	2	.	47	.	5	..	2	...
Hypochondriasis	7	...	6	..	1	. .	14	...	3	...	...	...
Amaurosis and Cataract ..	8	.	4	...	2	...	14	...	3	...	22	. .
Shortsight	5	...	. .	...	5	.	10	...	. .	..	...	...
Nyctalopia .	1	. .	2	...	...	...	3	...	36	...	3	...
Ophthalmia ...	840	.	190	...	286	...	1,316	...	1,535	...	707	...
Otitis	249	..	68	...	47	...	364	...	291	...	96	...
Deafness ..	32	...	19	...	7	...	58	...	59	...	...	. .
Epistaxis .	13	1	1	...	4		18	1	14	...	19	...
Polypus nasi .	...	...	2	...	...	...	2	...	1	...	..	...
Ozæna ..	4	1	3	...	.	..	7	1	4	...	15	2
Pericarditis ..	19	1	4	1	10	1	33	3	2	1	6	3
Heart Disease, Valvular ...	125	23	52	6	33	7	210	36	17	8	11	10
Hypertrophy of Heart ...	78	5	35	2	11	. .	124	7	3	1	7	5
Fatty Degeneration of Heart	1	3	1	...	...	1	2	4	...	1	5	4
Rupture of Heart and Aorta	1	3	...	2	...	..	1	5	...	1	...	...
Rupture of Vena cava ...	...	...	...	.	...	...	...	...	...	...	1	1
Aneurism, Aortic ...	35	24	16	11	5	6	56	41	5	1	...	...
„ Femoral ...	1	...	...	...	...	...	1	...	...	...	...	...
„ Popliteal ...	2	...	...	...	...	.	2	...	...	..	...	...
Angina Pectoris ...	4	..	4	..	...	...	8	...	1	...	...	...
Palpitation ...	340	..	80	...	84	..	504	...	7	...	1	...
Syncope ..	1	..	...	...	...	...	1	...	4	2	2	...
Embolism ..	...	..	..	...	...	...	...	...	...	...	...	1
Phlebitis .	1	...	..	. .	1	...	2	...	3	...	10	...
Varicose Veins ...	18	...	9	...	11	...	33	...	6	...	1	...
Glandular Inflammation .	656	...	318	...	246	.	1,220	...	215	...	132	...
Goitre ...	1	...	...	. .	...	...	1	...	97	...	...	...
Disease of Supra-renal Capsules ...	1	...	...	...	...	...	1	...	..	...	...	...
Laryngitis	6	1	...	...	...	...	6	1	19	3	11	1
Bronchitis	1,765	2	387	3	396	. .	2,548	5	1,672	65	770	33
Asthma ...	11	3	14	...	14	...	39	3	87	3	195	7
Pneumonia	181	38	25	2	33	3	239	43	621	167	659	193
Gangrene of Lungs .	...	...	...	...	...	...	...	...	...	...	1	4
Pleurisy ...	118	4	20	...	13	...	1[illegible]	4	239	12	248	16
Aphtha ...	...	...	...	...	...	...	...	...	...	...	7	...

---

* Not including 11 men killed in an outbreak in the Bareilly Jail.

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL AND DIED IN AND OUT OF HOSPITAL.											
	ARMY OF BENGAL.		ARMY OF MADRAS.		ARMY OF BOMBAY.		ARMY OF INDIA.		NATIVE ARMY OF BENGAL.		JAIL POPULATION OF BENGAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Odontalgia ..	1	...	2	.	...	...	3	..	63	...	39	..
Stomatitis ..	38	...	11	.	7	...	56	...	80	2	54	...
Tonsillitis ..	678	...	177	...	148	...	1,003	...	193	...	33	...
Gastritis .	13	1	1	..	4	1	18	2	10	3	9	1
Enteritis ...	5	3	4	1	3	1	12	5	7	5	18	13
Peritonitis ..	12	...	2	1	2	...	16	1	5	2	17	12
Hernia ...	46	...	13	...	12	...	71	.	24	...	16	...
Ileus .	1	..	1	...	..	..	2	..	3	2	3	4
Hæmatemesis ..	3	...	1	..	2	...	6		2	...	13	3
Melæna ...	1	...	...	...	1	...	2	..	...	...	3	...
Dyspepsia ...	1,203	..	794	...	363	..	2,420		413	..	856	...
Colic ...	189	...	65	...	59	.	313		686	...	700	..
Constipation ...	42	...	19	...	15	...	76		198	...	254	...
Dysentery ...	1,156	41	781	25	246	10	2,183	76	4,191	61	5,511	606
Diarrhœa ...	2,206	4	648	...	624	3	3,478	7	2,515	60	1,157	239
Hæmorrhoids ...	301	...	102	...	71	...	477	...	150	...	144	...
Fistula in Ano ..	43	...	14	...	6	...	63	...	23	...	22	1
Pericœcal Abscess ..	...	...	..	1	..	...	...	1	...	...	...	1
Worms, Ascarides ..	...	...	4	...		...	4	...	9	...	6	
„ Tape worm ...	148	...	41	...	72	...	261	...	3	...	14	...
Spleen Enlargement .	274	1	28	.	62	...	364	1	648	18	554	24
Rupture of Spleen ...	1	1	...	...	...	...	1	1	1	1	1	3
Hepatitis ..	2,073	96	720	39	465	20	3,258	155	87	9	40	10
Cirrhosis ...	10	5	..	1	1	1	11	7	1	1	2	...
Cyst of Liver ...	2	...	..	...	...	...	2	...	...	...	..	1
Jaundice ...	223	1	25	...	39	...	287	1	80	1	120	1
Ascites ..	1	...	...	...	7	..	8	.	7	3	31	9
Nephritis ...	58	7	8	.	16	5	82	12	26	4	16	7
Cystitis ...	23	...	11	...	10	...	44	...	16	1	12	4
Hæmaturia ..	2	..	...	.	1	...	3	..	8	...	6	...
Calculus and Lithiasis ...	4	...	...	...	...	...	4	...	22	...	7	1
Diuresis and Diabetes ...	3	...	...	...	...	.	3		7	1	4	2
Enuresis .	13	..	5	..	1	...	19	..	1	...	2	...
Ischuria ...	1	...	...	..	...		1	.	...	...	6	...
Stricture of Urethra ...	133	..	27	...	36	.	196		27	1	41	5
Urinary Fistula ...	7	...	...	..	2	..	9	.	...	..	6	...
Extravasation of Urine ..	1	.	...	...	.	...	1	..	...	..	...	.
Gonorrhœa ...	3,371	.	855	..	830	...	5,056		423	...	135	...
Phimosis ...	24	...	8	...	14	...	45	..	17	..	44	...
Warts ...	104	...	21	..	11	...	136		1	..	1	...
Orchitis ...	622	...	185	.	112	...	919	..	270	..	93	.
Hydrocele ...	18	...	11	..	2	...	31		18	..	43	...
Hæmatocele ..	...	...	2	..		...	2	.	1	...	...	...
Varicocele ...	22	...	2	..	...	...	24	.	6	...	...	.
Periostitis ..	55	...	24	...	19	...	98	.	32		12	...
Caries ...	7	...	3	..	...	...	10	...	2	...	5	..
„ of Spine ...	...	...	...	1	...		..	1	...	..	.	1
„ of Mastoid Cells ...	...	1	...	...	...	1	...	2	...	...	.	1
Necrosis ...	10	...	5	..	..	...	15	..	5	2	11	1
Synovitis and Bursal Inflammation ...	99	...	33	...	24	..	150	.	70	1	35	1
Contraction ...	6	...	2	...	..	...	8	..	4	...	...	...
Rupture of Muscle ..	1		...	.	1	...	2	.	3	.	...	...
Atrophy of Muscle ...	...	...	1	...	..	..	1	..	1	.	.	...
Cramp ...	2	...	1	...	...	...	3		2	..	.	..
Phlegmon and Abscess ..	571	...	208	.	170	...	949	..	1,566	1	2,170	6
Ulcer ...	908	...	422	...	299	...	1,629	.	2,382	.	1,711	3
Whitlow ..	98	..	39	..	57	...	194	.	256	..	124	...
Carbuncle ...	12	...	4	...	3	..	19	...	33		15	.
Boil ...	667	...	290	...	206	.	1,163	...	1,804	.	483	...
Itch ..	58	..	20	...	13	.	91	...	900	..	569	...
Skin Diseases ..	408	..	149	...	121	...	678	.	636		267	...
Guinea Worm ..	2	...	12	...	32	...	46	...	341	...	141	..
Tumour ..	28	1	7	...	8	..	43	1	22	.	19	..
Childbirth .	...	.	..	...		..	...		..		46	.
Abortion .	...		...	...	...	..	...		..	...	10	1
Hæmorrhage after Childbirth		...	...	...	...	..	...	.	...	.	4	..
Menorrhagia ...		...	...	...	...	..	...		...	.	12	...
Leucorrhœa ...	.	...	...	...	...	..	...		...	...	1	
Uterine Cancer ...			...	.	...		...	..	..	..	1	1
General Debility ...	592	1	510	..	173	...	1,275	4	643	19	148	102
Delirium Tremens ...	120	9	96	7	67	6	292	22	...	...	2	..
Poisoning, Alcohol ...	13	...	11	.	32	..	56	...	..	...	.	...
„ Arsenic ..	...	...	...	.	...	...	...	...	2	1	...	...
„ Vegetable poisons	3	1	3	.	...	...	6	1	10	2	9	4
Burning ..	36	...	14	.	13	...	63	...	191	...	92	...
Wound and Contusion ...	1,960	...	830	...	631	...	3,421	.	4,102	..	1,578	21
Concussion of Brain ...	9	...	1	...	1	...	11		8	2	3	...
Fracture ...	138	...	77	...	49	..	264	.	107	...	234	..
Dislocation ...	35	...	4	...	11	..	50	.	34	..	22	...
Sprain ...	779	...	272	...	204	...	1,255	..	117	...	62	...
Snakebite ...	...	..	...	..	2	..	2		21	3	7	1
Murder and Homicide ...	...	..	...	...	...	3	...	3	...	2	...	...
Suicide and Suicidal Wounds	7	20	3	9	2	6	12	35	..	11	21	6
Accident ...	...	17	...	6		3	..	26	..	5	...	...
Drowning ...	..	10	...	5	...	1	...	16	...	4	...	..
Killed in Action ...	..	...	...	...	...	...	.	..	..	13	..	..
Suffocated while drunk ...	..	7	..	1	...	...	...	8	..	..	...	...
Foreign body in Œsophagus	1	1	...	...	...	.	1	1	1	...	...	...
Blisters of feet ...	104	...	17	...	44	.	165	...	2,430	...	3	..
Surgical operations ...	12	...	2	...	3	..	17	.	...	...	...	.
Punished ...	..	...	...	...	...	...	...	...	10	...	60	..
Execution ...	.	...	...	...	..	2	...	2	...	...	..	...
Cause not ascertained ...	27	...	9	1	9	...	45	1	6	12	3	1

NINTH ANNUAL REPORT

OF THE

Sanitary Commissioner with the Government of India,

1872,

WITH

APPENDICES AND RETURNS OF SICKNESS AND MORTALITY AMONG THE BRITISH TROOPS IN INDIA, AND ALSO AMONG THE NATIVE TROOPS AND PRISONERS IN THE BENGAL PRESIDENCY, FOR THE YEAR.

CALCUTTA:
OFFICE OF SUPERINTENDENT OF GOVERNMENT PRINTING.
1873.

NOTE.

A SEPARATE edition of the first section of this volume—the Report on the Cholera Epidemic of 1872 in Northern India—has already been distributed under the orders of the Government.

With reference to Dr. Douglas Cunningham's paper on the microscopic bodies found in the atmosphere, it must be explained that time did not admit of the plates being colored except in a very few copies. Arrangements were made several months ago for having them all printed in colors, but, owing to an unforeseen press of work in the Surveyor General's office, this could not be done within the time required. The want of the coloring is much to be regretted, as without it the excellence of the original drawings is considerably marred.

J. M. CUNINGHAM, M.D.,

Sanitary Commissioner with the Government of India.

25th October 1873.

TABLE OF CONTENTS.

SECTION I.

REPORT ON THE CHOLERA EPIDEMIC OF 1872 IN NORTHERN INDIA.

PARA.		PAGE.
1	Mortality caused by the epidemic	1
2	Questions suggested	1
3	Their great practical importance	1
4	Sketch of the cholera of 1871	2
5	Increased prevalence and signs of movement in the end of 1871	2
6	Cholera in 1872. Statistics of general population, although defective, of great value	2
7	Statistics of cholera in Bengal Proper	3
8	Borne out by the statistics of Calcutta	3
9	Statistics of cholera in Orissa agree with those of the contiguous Madras Districts	3
10	Immunity of Chota Nagpore in connection with the history of the epidemic in the Upper Provinces	3
11	The epidemic in Nepal	3
12	In the North-Western Provinces	4
13	In Oudh	4
14	In the Punjab	4
14	Escape of the Western Districts	5
15	Beyond the Punjab, in Cashmere	5
16	Affghanistan escaped, Bokhara suffered	5
17	Cholera in Persian Khorassan and Astrabad, &c., &c.	5
18	The Central Provinces generally free	5
19	Cholera in Berar slight	5
20	Cholera in the Bombay Presidency chiefly in the south. Scinde escaped	5
21	In the Central India States widely distributed, but severe in only a few places	6
22	In Rajpootana prevalent in a few places	6
23	In the Madras Presidency more circumscribed than in 1871	6
24	In British Burmah few deaths from cholera	6
25	The broad facts shown in the map	7
26	Even in the epidemic area the proportion of places attacked was small	7
27	In the European Army of India confined chiefly to Bengal	7
28	Statistics of European Army generally bear out the history of the epidemic among the general population	7
29	Among the Native Troops	8
30	Among the Prisoners	8
31	Necessity for careful investigation into the circumstances of outbreaks	8
32	Notes on 108 outbreaks given separately	8
33	Facts only recorded in them, not opinions	8
34	Mode of arrangement of Notes	9
35	Section II.—Details of the outbreaks: points deserving attention	9
36	Isolated cases early in the year	9
37	Periods of prevalence	9
38	Prevalence among different communities at the same station	10
38	Evidence of a general influence at Allahabad	10
39	Illustrated by the cases of Deyrah, Meerut, Meean Meer	10
40	Illustrated at Peshawur and Kohat	10
41	Exceptions to this rule	10
42	Diarrhœa generally prevalent during outbreaks	11
43	Cholera conferred no immunity from fevers	11

PARA.		PAGE.
44	Many questions must be deferred. Age of children attacked	11
45	Discrepancies in minor details	11
46	Section III.—Facts regarding importation and communication	12
47	Importation could not be traced in any one of the 100 communities under careful observation	12
48	Districts and towns generally left out of consideration, as it is almost impossible to ascertain the facts in them	13
49	Examination of the facts regarding supposed introduction into the Jubbulpore district	13
50	Into Goojranwalla	13
51	Into Goojrat	13
52	Into Peshawur	14
53	Supposed spread by pilgrims from Hurdwar	14
54	Some confusion as to what constitutes evidence of importation	14
55	Special danger from cholera to pilgrims and travellers; but Hurdwar has very rarely suffered	14
56	The general distribution of the epidemic does not accord with the idea that it was spread by man	15
57	It was not propagated along highways of communication	15
58	The disease did not travel more rapidly than it used to do when there were no railways	15
59	Evidence derived from the dispersion of the boys at St. Peter's College, Agra, who in no instance spread cholera	16
60	European soldiers sometimes the first persons attacked	17
61	Is there any evidence that the disease was communicated from the sick to the healthy?	17
62	General immunity of the attendants	17
63	The apparent exceptions at Allahabad and Kohat do not support the contagion-theory	17
64	Remarks on cases of supposed communication	18
65	Nature of the evidence required to prove contagion	18
66	The doctrine of contagion acted on to an extreme extent during the epidemic	18
67	Section IV.—Meteorology. Information scanty	19
68	General meteorological characteristics of the year in Upper India	19
69	Want of a normal standard of comparison	19
70	Section V.—Local conditions. Their importance in relation to the localization of cholera	20
71	Drainage generally defective	20
72	Defects in water-supply, and the water theory	20
73	The water theory irreconcilable with the geographical distribution of the epidemic	20
74	With the experience of the same Provinces in different years	21
75	And of individual stations	21
76	With the facts of outbreaks	21
77	Or the experience of the camps	21
78	No evidence that the disuse of any particular water was attended with disappearance of cholera	21
79	The almost simultaneous attack of different sections of the community	22
80	Meean Meer, Peshawur, and Kohat, no exception to the difficulty	22
81	The general rise and fall of the outbreak in different sections	22
82	Its disappearance from among them all about the same time	23
83	The pollution of the water-supply is always supposed to occur at the time when it is least likely	23
84	The water theory opposed to varying intensity of the epidemic in different years	23
85	Difficulty of explaining the facts at Peshawur and Kohat by the water theory	24
86	At Kussowlie parties changing locality, but continuing to use the same water-supply, shook off the disease	24
87	The severe outbreak at St. Peter's College, Agra, not explicable on the water theory	24
88	No case in India ever recorded in which there is good reason to believe that cholera discharges have caused cholera	25
89	The importance of good water not to be confounded with the "water-theory"	25
90	Section VI.—Preventive measures	26
91	Quarantine in cantonments	26
92	The facts examined at Roorkee, Umballa, and Jullundur	26
93	At Mooltan, Sealkote, Rawul Pindee, Attock, and Nowshera	26
94	At Peshawur	27
95	Escape of Umritsur without quarantine	27
96	Impossibility of enforcing strict quarantine even in cantonments	27
97	Great evils attendant on it	27
98	Still greater when it is applied to the population generally	28
99	Now prohibited in the Punjab	28
100	No evidence that in any instance quarantine did good	28
101	Practical nature of the question to be determined	28

PARA.		PAGE.
102	These remarks do not apply to the system of isolating new arrivals in Jails	29
103	Nor to the special case of pilgrims	29
104	Enforced isolation of cases of cholera very hard on the people	29
105	Movement from the infected locality generally advisable	30
106	Little benefit followed short moves at several of the stations worst attacked	30
107	More decided moves for the troops at these stations recommended in June 1872	30
108	Probable effects of such movements, if they had been made	31
109	Good followed even the partial movement at Meean Meer	31
110	Principle on which movement is founded	31
111	Theoretical objections interfered with movement	31
112	Rules generally approved. Suggestions for trivial modifications	32
113	Section VII.—Previous history	32
114	Any remarks apply only to cholera in India	32
115	Improvement of mortuary statistics required	32
116	Accurate and unprejudiced record of facts	33
117	Danger of reasoning from analogy	33
118	Necessity for careful induction	33
119	Sanitary improvements the only protection against cholera	33
120	Illustrated by experience	34
121	Direction of further enquiries	35
122	Pettenkofer's views deserve special attention	35
123	Many questions unconsidered	36
124	Acknowledgments to medical and other officers	36
	NOTES ON INDIVIDUAL OUTBREAKS. For particulars *vide* Table	37

SECTION II.

EUROPEAN TROOPS.

125	Total mortality of the year in the Army of India and in the three Presidencies	151
126	Omitting the proportion due to cholera	151
127	Extent of sickness	151
128	Comparison of sickness in the three Presidencies by months	152
129	Forms of sickness in the three Presidencies compared	152
130	Causes of death in the three Presidencies	153
131	Bengal—number of men daily inefficient from sickness	153
132	Results in each group—Bengal Proper	154
133	Gangetic Provinces and Oudh	154
134	Meerut and Rohilcund	154
135	Agra and Central India	154
136	The Punjab	155
137	Hill stations	155
138	Convalescent Depôts	155
139	Proportion of troops in the hills and plains of Bengal	155
140	Results in the groups of Madras and Bombay	156
141	Meteorology of 1871—Bengal Proper	156
142	Meteorology of the North-Western Provinces	163
143	Meteorology of Oudh	165
144	Meteorology of the Punjab	165
145	History of the chief diseases in 1872. Small-pox somewhat more prevalent than in 1871	166
146	More prevalent also among the people generally	166
147	Malarial fevers generally more prevalent than in 1871	168
148	Their distribution by stations	168
149	Generally more prevalent among the people	168
150	Enteric fever, continued common	170
151	Especially among young soldiers	170
152	Epidemic of Dengue	170
153	Among the Native Troops and Prisoners	171
154	Dengue among the general population	171
155	Apoplexy very prevalent	173
156	Dysentery and Diarrhœa more prevalent than in 1871	173
157	Bowel complaints generally more fatal among the people	173

PARA. PAGE
158 Delirium tremens less prevalent ... 175
159 Hepatitis ... 175
160 Venereal diseases. Number of lock hospitals ... 175
161 Stations at which there are no lock hospitals ... 175
162 Stations under the rules in which cases of venereal affections increased in 1872 ... 176
163 Stations under the rules in which they decreased in 1872 ... 176
164 These statistics not an accurate test of local extent of disease ... 176
165 More detailed statistics desirable for each station ... 177
166 Efficiency of the system to be judged by the statistics of the army as a whole ... 177
167 Venereal diseases in the European Army of Bengal in 1872. Some improvement ... 177
168 Statistics of Madras and Bombay ... 178
169 Compared with those of home stations ... 178
170 Rules well suited for the purpose intended ... 178
171 Relation of disease among the women and the men ... 179
172 Deaths according to age ... 179
173 Number of married and unmarried soldiers in the three Presidencies ... 181
174 Comparative sickness and mortality among the married and unmarried ... 181
175 Extent of intemperate habits ... 184
176 Principle on which the invaliding has been calculated ... 184
177 Extent of invaliding in the Army of India in 1872 compared with 1871 ... 184
178 Extent of invaliding in Bengal in 1872, as compared with previous years ... 185
179 Invaliding in Madras and Bombay in 1872 compared with previous years ... 185
180 Causes of invaliding in the three Presidencies ... 185
181 Total loss by death and invaliding in the three Presidencies ... 185
182 Sickness and mortality in different stations ... 185
183 Sickness and mortality in different regiments ... 186
184 Average number of days spent in hospital by each man ... 186
185 Sickness and mortality among women in the three Presidencies ... 186
186 Sickness and mortality among children in the three Presidencies ... 187
187 Deaths of children according to age—Bengal ... 187
188 Deaths of children according to age in Madras and Bombay ... 187
189 Causes of deaths among children at different ages ... 189
190 Statistics of women and children for five years, 1868-72 ... 190
191 Mortality among officers ... 190
192 Sanitary progress ... 193
193 Registration of deaths in cantonments ... 193
194 Cholera enquiry. Dr. D. Cunningham's observations on air ... 193
195 Further Investigations ... 193
196 Proposed investigation into Delhi Boils ... 194
197 And into Leprosy ... 194
198 Improvement in water-supply ... 194
199 Filters for barracks ... 195

SECTION III.

NATIVE ARMY.

200 Total mortality during the year. Regular Native Army ... 196
201 Mortality among men with their Regiments, Regular Native Army ... 196
202 Diseases to which the mortality was chiefly due ... 197
203 Death-rate at different stations. First group ... 197
204 Mortality in individual regiments ... 197
205 Sickness of the year. Admissions into hospital ... 198
206 Cantonment reports. Local causes of sickness ... 198

SECTION IV.

JAILS.

207 Sickness and mortality very nearly the same as in 1869 ... 199
208 Chief forms of sickness ... 199

PARA. | | PAGE.
209 Chief causes of mortality. Bowel complaints 199
210 General facts regarding the sickness and mortality 200
211 Results in each group, compared with those of each of the preceding thirteen years ... 200
212 Excessive mortality in certain jails 200
213 Importance of testing the value of sanitary improvements in diminishing cholera in jails ... 202

SECTION V.

GENERAL POPULATION.

214 Vital statistics—Deaths from injuries 203
215 Details of injuries 204
216 Mortality from "all other causes" 205
217 Total mortality in each Province 206
218 General summary of deaths in each Province 207
219 Measures taken for improving the registration 208
220 Food supply of the people 208
221 Personal Proceedings of the Local Sanitary Commissioners 208
222 Sanitary Progress 209

APPENDIX A.

MICROSCOPIC EXAMINATIONS OF AIR.

i—liv

The Table of Contents is prefixed to the Report.

APPENDIX B.

NOTE ON THE INFLUENCE OF AGE AND LENGTH OF SERVICE AS AFFECTING THE MORTALITY AND INVALIDING OF THE EUROPEAN ARMY IN 1872.

lv—lxxvii

The Table of Contents is prefixed to the Report.

ANNUAL RETURNS OF THE EUROPEAN AND NATIVE ARMIES AND OF THE JAIL POPULATION OF THE BENGAL PRESIDENCY FOR THE YEAR 1872.

The Table of Contents is prefixed to the Returns.

ANNUAL SANITARY REPORT FOR 1872.

SECTION I.—REPORT ON THE CHOLERA EPIDEMIC OF 1872 IN NORTHERN INDIA.

Mortality caused by the epidemic.

Another epidemic of cholera has swept over Northern India. Nor has the disease been confined to this portion of the continent; it has prevailed anew in the West. In the South also, where it seemed to be dying out at the close of 1871, it continued during 1872, and although its severity in this direction was more circumscribed than it had been in the year previous, the mortality which it occasioned was but little less. In Bengal Proper, moreover, cholera showed a greatly increased activity not only in the regions which comprise the endemic area, but also in those which lie beyond it.

The deaths registered as due to cholera in 1872 numbered in—

Bengal Proper	46,901
North-Western Provinces	50,565
Oudh	26,566
Punjab	8,727
Central Provinces	1,592
Berar	1,578
Bombay	15,642
Madras	13,247
British Burmah	640
TOTAL ...	165,458

Altogether, among the people of British India during the past year, more than 165,000 deaths were ascribed to this one cause, and there is every reason to believe that this number falls very far short of the truth. In the European Army of India there were 888 cases among men, women and children, of which no less than 615 were fatal. But 817 of these cases and 559 of the deaths occurred in that portion of the army which occupied the Bengal Presidency—a mortality all the more appalling in that it was in the main confined within two months of the year.

Questions suggested.

2. What is the history of this epidemic? What are the facts connected with its spread, and how far do they tend to increase our knowledge? Is cholera a contagious disease? Is a specific poison multiplied in those who are attacked, which is capable of being transmitted to, and of producing like symptoms in, others; and if this be the case, is this poison contained in the discharges, and is it usually disseminated by means of water? Or setting aside the doctrine of contagion, both in the ordinary and modified acceptations of the term, is man the carrier of a specific entity from an infected locality which germinates and bears its deadly fruit wherever the local conditions are suited to its growth? Is human intercourse *the* great and indispensable means by which cholera is borne from its home and spread over the earth?

Their great practical importance.

3. These are weighty questions—questions which affect the well-being not only of India, but of every country in the world, questions which, in these days of rapid and constantly increasing communication between the East and the West, have a significance and a practical importance very much greater even than they had before. And how are they to be answered? Not by theoretical discussions, however clever or learned, as to the nature of cholera and the mode of its diffusion, but by a

patient investigation of facts—of *all* the facts so far as they can be ascertained. No country in the world presents such a field for the study of cholera as India, where one portion is the home of the disease, and others are subject to such severe and frequent invasions.

Sketch of the Cholera of 1871.

4. What then are the facts regarding the epidemic of 1872 in India? But before attempting to reply to this question, it will be necessary to glance at the history of cholera in the year previous. Upper India was then singularly free from the disease. In the whole European Army of Bengal there were only 41 cases, fewer than they had been for a long series of years; up to the end of October there had been only 16. In Madras cholera was widely spread, but the European troops can be said to have suffered only at Secunderabad. The outbreak there in May accounted for 74 out of the total of 76 cases in the whole Presidency. The Bombay Army furnished but two cases altogether. The statistics of the women and children showed the same comparative immunity as those of the men, and indicated the same geographical distribution of the disease, while these again were borne out by the history of the Native troops and prisoners within the same areas. In Eastern Bengal, where there is no European garrison, the sepoys suffered to some extent, and the disease also attacked several of the jails. Regarding the general population, the great facts noted in the Sanitary Report* for that year were "the remarkable immunity of the Central and Upper Provinces, the occupation of the eastern portion of the North-Western Provinces and Oudh, the epidemic prevalence extending from the endemic area up to the north-east of Bengal Proper, and the large expanse of country covered by the disease in both the Madras and Bombay Presidencies."

Increased prevalence and signs of movement in the end of 1871.

5. But in the history of the cholera of 1871, in its relation to the epidemic of 1872, the points most worthy of notice are, that in the end of that year there was a marked increase of the disease within the endemic area and in the eastern provinces, while at or about the same time there were signs of movement further up. The mortuary statistics of Bengal Proper, lamentably imperfect as they are, show that in October, November and December of 1871, cholera was much more widely spread among the people than it had been in the previous months. In Calcutta the deaths from this cause attained a maximum in November, and remained nearly as high in December. In November an outbreak occurred in Her Majesty's 96th Regiment at Dinapore, and almost simultaneously in the jail at Patna, 7 miles distant. In some of the districts of Oudh, also, there was a great increase of cholera in October, which was more fully developed in November and was still prevalent in December. In November also the troops at Lucknow were attacked, and in the same month occurred the remarkable outbreak in the outskirts of Delhi, the details of which have been given in last Sanitary Report.†

Cholera in 1872. Statistics of general population, although defective, of great value.

6. In considering the history of cholera in 1872, it will be most convenient to take first the general population of the country, regarding which we have only the broad facts depicted in the death returns, and then the troops and prisoners, in respect to whom there are much more exact statistics. The mortuary registration among the people is still confessedly imperfect; at the best it shows only the deaths from cholera, and not the numbers attacked, and even the number of deaths cannot be relied on as by any means accurate—a result hardly to be wondered at when we remember the enormous difficulties which have to be encountered. No doubt, as a rule, they are much understated, and it is to be feared that in some parts of the country this defect has been aggravated of late by the fear of quarantine and other measures, which, although designed with the best intentions, have proved very irksome to the people, and have prompted them either to conceal the disease altogether or return it under another name. But it would be a great mistake to imagine that, because these records are imperfect, they must therefore be of no use. On the contrary, there is ample evidence to show that they are of the greatest value, and that the general

---

* Eighth Annual Report of the Sanitary Commissioner with the Government of India, 1871, page 26.

† Eighth Report, page 36.

distribution of cholera over India which they represent agrees in a singular manner with the well-ascertained facts regarding the disease in those communities which are under careful observation. As will be seen hereafter the daily details of particular outbreaks in towns often accord in a remarkable way with those of the neighbouring cantonments—strong evidence that although the actual numbers may be incorrect, the general history of the outbreak recorded day by day contains a large element of truth.

Statistics of cholera in Bengal Proper.

7. The 46,901 deaths from cholera registered in Bengal give but a small proportion out of a population of 66,856,859, and even if the outlying tracts which are not yet included in the registration be deducted, the ratio of mortality is still insignificant. The returns are yet far too imperfect for any such calculations, but the history of cholera which they contain is important, and the details independently recorded in the different districts of each group afford evidence that this history presents a general truth. On reference to Statement A given at the end of this report, in which the statistics of Bengal Proper are detailed by months for each district, it will be observed that throughout the endemic area represented by the first group, there was generally a continuance in the early part of the year of the cholera which had prevailed in the end of 1871. As a rule, no great increase took place until November, when there was a decided rise in the deaths, which was still more strongly manifested in December. In so large an area, different parts of which are subject to very different conditions, variations may naturally be expected. The history of cholera in the alluvium, for example, can hardly be the same as what it is on the laterite, or where the ground rises towards the hills. The general and marked decrease of the disease in the low-lying tracts, coincident with their submergence by the rains, deserves attention.

Borne out by the statistics of Calcutta.

8. The truth of this account of the rise and fall of cholera during the year in Lower Bengal is borne out by the mortuary returns of the town of Calcutta, in which it may be fairly assumed that the registration is more accurate than it is in rural circles. The monthly deaths from cholera in Calcutta, which are taken from the report of the Health Officer, have been added to the general statement for Bengal already referred to, so that the figures may be seen side by side. Commencing with 80 in January and 81 in February, the disease may be said to have declined to 61 in September. In October it rose to 86, in November to 181, and in December to 248. The total deaths from cholera in Calcutta during 1872 were 1,142. In 1870 they had been 1,563, and in 1871 there had been a minimum of 800.

Statistics of cholera in Orissa agree with those of the contiguous Madras Districts.

9. In the eastern districts also there was the same increase in the prevalence of cholera at the end of 1872 as was manifested in Calcutta and throughout the endemic area. In the south-western direction, in the districts of Cuttack and Pooree, to which may be added Balasore, which lies immediately contiguous although it is within the endemic area, there is a wonderful similarity in the returns, all of which show a steady rise in the deaths from January to June, and then a steady decline until in the last month of the year it had almost disappeared. And the similarity is the more noteworthy, because it bears out the history of the cholera in those districts of the Madras Presidency, Ganjam, Vizagapatam and Godavery, which stretch to the south-west below Orissa, as may be seen by a reference to Statement H.

Immunity of Chota Nagpore in connection with the history of the epidemic in the Upper Provinces.

10. Again, if the districts of Behar be taken as a group, it appears that the figures tell very much the same story in all, a gradually increasing prevalence up to July or August, and then a gradual decline. But perhaps the most noteworthy point in the statement for Bengal Proper is the slight prevalence of cholera over Chota Nagpore and the other districts grouped with it, a fact which, taken in connection with the immunity of the Upper Provinces, stretching far away to the west of it, well deserves notice.

The epidemic in Nepal.

11. It will be convenient here to record the few facts which are known concerning the cholera in Nepal, for it lies due north of the Behar Division of Bengal. The exact date of its appearance here is not stated. The first report is dated the

12th August, but by that time 60 deaths had already occurred in the town of Katmandoo. From the 12th to the 23rd the number was 211, from the 24th to the 1st September 347, from the 2nd to the 10th 515, from the 11th to the 22nd it fell to 278 and from the 23rd to the 8th October to 166. After that date only one death from cholera was reported. The Resident mentions that "there is a rumour, which the Nepalese Government believes to be true, that Thibet has suffered from this epidemic," but on this point no further information has been received. So far as can be ascertained, the disease was confined almost entirely to the town of Katmandoo and its neighbourhood. It was not general in the valley of Nepal.

In the North-Western Provinces.

12. After two years of comparative exemption the North-Western Provinces again suffered severely from cholera in 1872. In 1870 the mortality from this cause was ·44 per 1,000, in 1871 it was only ·11, but in 1872 the deaths under this head numbered 50,565, equivalent to 1·64 per 1,000. As may be seen from Statement B, the disease fell most heavily on the eastern districts, which are collected together as the first group. In Jounpore and Bustee, in particular, the loss of life was very great, 8,251 deaths having occurred in the one, and 9,537 in the other. The epidemic was early in this part of the country—even in June it had begun sensibly to decline. The next group, comprising the districts south of, or bordering on, the River Jumna, suffered little. Banda, Humeerpore, Jaloun, Jhansie and Lullatpore almost entirely escaped. As regards Etawah, which shows 1,450 deaths, it is to be remarked that they nearly all occurred in that portion of the district which lies to the north of the Jumna. In all only 56 were reported from the two circles south of that river. In the third group, which comprises those districts lying to the west of the line of 80° east longitude, the epidemic was most severe in Shajehanpore and next in Seharunpore. The first seven months were comparatively free. It was in August, September, and October that the disease acquired force in these parts. Its appearance in the Terai Pergunnahs and in Kumaon late in the year is of interest in connection with its continuance in these quarters during the early part of the current year.

In Oudh.

13. Statement C shows the distribution of cholera in the provinces of Oudh. The disease was widely spread here, but its violence was exerted chiefly in the south and west of the province on the one hand and in the north-west on the other. The Sanitary Commissioner remarks that "the cholera passed over the province from south-east to north-west in two belts, one south, parallel to the left bank of the Ganges, and the other north, parallel to the left bank of the Gogra, leaving the intermediate centre tract comparatively free." The first of these belts is represented by the districts of Sultanpore, Pertabghur, Rai Bareilly and Oonao, all of which impinge on the eastern districts of the North-Western Provinces, where, as already stated, cholera was very prevalent, and continued onwards to Barabunkee and Hurdui. The other includes Gonda and Baraitch. It will be seen that in all of these places the loss from cholera was heavy.

In the Punjab.

14. In regard to the statistics of the Punjab, as shown in Statement D, it is to be remarked that there was no excessive prevalence in any one district. I am inclined to believe, as the result of enquiry in several places, that at least some part of the mortality from cholera in this province during 1872 was concealed by the people out of fear of quarantine and of separation from their friends when attacked with the disease; but making every allowance for this source of error it may still be stated as a fact, regarding which there can be little or no doubt, that there was no very violent outbreak in the Punjab in 1872, such as those in Umritsur and Peshawur in the epidemic of 1869. The vernacular statements for each village, which were supplied to me by Dr. DeRenzy, the Sanitary Commissioner, proved of much value in the course of my enquiry. To these frequent reference will be made hereafter; for the present, there is only one point in the history of the cholera in the Punjab during the past year which is of special importance,

Escape of the Western Districts.

and to which attention must now be drawn, and that is, the escape of the districts lying to the west and north-west. It will be observed that in Montgomery, Mooltan, Mozuffergurh, Dera Ghazee Khan, Dera Ismail Khan, Jhung and Bunnoo the epidemic was represented by only a very few deaths, varying from a solitary one to a maximum of 22.

Beyond the Punjab, in Cashmere.

15. Of the epidemic in the countries beyond the Punjab little is known, but the few facts which are available are of much interest. In the Cashmere territory cholera was severe. It was first reported at Jummoo on the 22nd May, and was attributed to pilgrims who had returned from the Hurdwar fair. It does not appear to have invaded the valley till the 25th June, when it showed itself both in the city of Srinugger and the rural districts. From that date up to the 12th October 10,525 cases are returned, of which 4,190 were fatal. Lieutenant Colonel P. Maxwell, who was resident during the season, is of opinion that the reports were greatly exaggerated, but it was found impossible to obtain accurate information.

Affghanistan escaped, Bokhara suffered.

16. No mention is made of cholera in Cabul, but in Bokhara to the north the epidemic was very severe. "Letters dated the 3rd August 1872 from Bokhara announce the appearance of cholera in great severity in the city of Bokhara and its neighbouring territories. It is stated that about 1,000 or 1,200 persons die every day in the city alone." In a further report it is mentioned that the "disease suddenly ceased at Bokhara wholly on the 17th." It also prevailed at Samarcand, but the dates of its appearance and cessation are not given. Little reliance can, I fear, be placed on the particulars of the outbreak, but there seems to be no doubt that early in August the people of Bokhara suffered severely from cholera.

Cholera in Persian Khorassan and Astrabad, &c., &c.

17. From Meshed, the capital of Persian Khorassan, the agent writes on the 8th September:—"It is about a month since the cholera has appeared here, and more than 200 persons die from it daily." Astrabad, which lies to the west of Meshed at the south-east corner of the Caspian, also was attacked. The disease was said to have been brought by a caravan of pilgrims who had lately arrived from Meshed; no dates are given. Although widely distributed, the epidemic does not seem to have been severe. From newspaper correspondents we learn that cholera prevailed at Balk and Bamian and also at Tashkoorghan, all of which are marked on the map.

The Central Provinces generally free.

18. Leaving the north and the north-west, we may now turn to the history of cholera as illustrated in the statistics of the Central Provinces. The fluctuations in the disease, to which this part of the country is subject, are very remarkable. In 1869, nearly 60,000 persons died of it. In 1870, the number was 107; in 1871, it was only 19. In 1872, it was 1,592, but it will be observed from Statement E that in many of the districts the returns are blank, in 12 out of the total of 21 no deaths from cholera were registered. The disease was confined chiefly to the south and south-west. Only in Nimar did it attain any degree of severity, and here more than one-half of all the cholera deaths for the whole province occurred.

Cholera in Berar slight.

19. In Berar, as shown in Statement F, 1,578 deaths from cholera were registered during 1872. In both 1870 and 1871, the number had been under 600, but in the epidemic of 1869 the province suffered severely—10,947 persons died of the disease. In 1872 it was confined almost entirely to the period between the end of July and beginning of October.

Cholera in the Bombay Presidency chiefly in the south. Scinde escaped.

20. In the Bombay Presidency cholera was much more active than it had been in the previous year. In 1871 only 5,821 deaths were registered from this cause, while in 1872, as shown in Statement G, the number was 15,612. The increase was chiefly in the southern parts. In Guzerat there was a considerable rise over the number in 1872, but in the whole of this country the total deaths were still only 517 in 1872. Further up, the exemption was still more marked, and

this is perhaps the most noteworthy point in the Bombay statistics. Scinde altogether escaped. The Khelat country beyond was also free.

In the Central India States widely distributed, but severe in only a few places.

21. In the Native States of Central India there is no registration of deaths, but at the request of the Foreign Office, made on my suggestion, the Agency Surgeons have furnished some interesting particulars. From their reports we learn that several of these States suffered, and that cholera was widely spread at and around Sehore, Bhopal, Bhopawur, Augur, Oojein, and Goonah. In May and June it was heard of in almost every direction around Sehore. In May 32 cases were reported from Nursingpore, 36 miles to the north-west, and 198 in Bhopal, 22 miles east. In June it was in Khilchipore, 80 miles to the north-west, and on the high road to Indore. At Sehore there were a few cases in these months, but it was not till the 13th July that it broke out in any severity. It was at its height on the 23rd August when 21 persons were attacked. The last case occurred on the 7th September. The town of Dhar is 20 miles to the east of Sirdarpore, the head quarters of the Malwa Bheel Corps and of the Bhopawur Political Agency, and lies on the road from Sirdarpore to Mhow. In this town in April 140 cases were reported, in May 87, and in June 60, or a total of 287, of which 106 were fatal. Other places in the neighbourhood also suffered. Many cases were reported between the 12th May and end of June along the road between Goonah and Sironj, places which lie nearly due north of Bhopal. Augur is nearly due north of Indore. Here a few cases occurred in May and June, and after a lull others followed in August, but the disease does not appear to have been prevalent in this direction. At Oojein, which lies between Indore and Augur, dropping cases occurred during several months, but caused no alarm. At Pertabgurh, again 40, miles south of Neemuch, a few attacks were reported in April and many in May. As may be seen from Statement J, the European troops at Mhow, Indore, and Neemuch were attacked, the first in April, the second in May, and the third in June.

In Rajpootana prevalent in a few places.

22. The Rajpootana States, which adjoin those of Central India, also came to a slight extent under the epidemic influence, but its violence, so far as can be ascertained, was confined to one or two places. On the 17th April two cases were reported at Peesangun in the Ajmere district. In the end of May there were two at Rajgurh, south of Ulwur, and five at Jhalra Putun, east of Neemuch. On the 1st June Oodeypore was attacked, and up to the 23rd there were 72 cases and 43 deaths; up to the 30th there had been 447 cases. On the 1st Jeypore began to suffer, from the 20th the disease increased, and up to the 9th July there were 212 deaths. In both these towns it was prevalent, but judging from the proportion of recoveries, it was of a mild type. In the Bhurtpore State cholera was reported in June, and two cases occurred at Kotah on the 28th of that month. In the Bekaneer Jail a prisoner was attacked on the 27th July, and there was a case among the general population on the 27th September. In the Ulwur State several cases were reported in July.

In the Madras Presidency more circumscribed than in 1871.

23. In 1870 the number of deaths from cholera in the Madras Presidency was returned as 55,867. In 1871 it fell to 17,656, in 1872 it still further decreased to 13,247. The distribution of the disease by districts and months is shown in Statement H. It will be seen that it was most severe in the north-west districts, in which its history, as already pointed out, accords in a remarkable manner with the statistics of the adjoining tract of Bengal Proper. Madras itself and the neighbouring country presents almost a blank, but in the south, Arcot and Salem return a considerable number of deaths, while South Canara shows the extension of the epidemic from the Bombay Presidency.

In British Burmah few deaths from cholera.

24. To complete this brief view of the statistics of cholera in India, a statement (I) has been added, embodying the results of registration in British Burmah. The total mortality for the province under this head amounted to 640. The disease was almost entirely confined to the Arracan Division, where it was chiefly prevalent in Akyab. It did not prevail either in the Pegu or Tennasserim Division.

The broad facts shown in the map.

25. Such are the broad facts regarding the history of cholera over India in 1872, as drawn from the mortuary registration in the provinces under British rule, and from special reports as regards Native States, and these broad facts are depicted on the map. A glance at it will show the epidemic extending out of the endemic area, stretching upwards on the north-east, downwards on the south-west, and upwards again through the eastern districts of the North-Western Provinces and through Oudh to Peshawur and far beyond our frontier. And side by side is the tract which was either altogether exempted or suffered so lightly that it cannot be included in the epidemic area, a tract which commences with Chota Nagpore, just outside the endemic area, and stretches for many hundreds of miles on to Ajmere, Sind, and Cabul.

Even in the epidemic area the proportion of places attacked was small.

26. Over the epidemic area, although the disease was widely diffused, it would be a great mistake to infer that every town and village it contains or even that the larger number of them suffered from the disease. On the contrary, although there is evidence of the general prevalence of an epidemic influence, the proportion of places that suffered was often very small. In the notes of individual outbreaks which are appended to this report, many instances of this will be found and others have been supplied by the Sanitary Commissioners. Even where the disease was severe the same fact is exhibited. In the Pertabghur District of Oudh, for example, where over 6,000 deaths from cholera were registered, they were reported from 465 villages out of 2,175. In Rai Bareilly, of nearly 7,000 villages, only 855 recorded deaths from cholera. Or to take an illustration from the Central Provinces, in Nimar, where the people suffered most, cholera deaths were reported from only 78 out of 588 villages. This result may be due partly to imperfection in the registration, and partly also to the fact that only fatal cases are recorded, but it still may be accepted as a truth that even within the epidemic area cholera is often confined to particular localities.

In the European Army of India confined chiefly to Bengal.

27. In the European Army of India, out of a strength of 77,235, including men, women, and children, there were, as has been already stated, 888 cases of cholera, of which 615 were fatal. The details are given in Statement J, and from these it will be seen that the disease was in the main confined to the Bengal Presidency. Here 817 of the 888 cases occurred, and 559 of the 615 deaths. In Madras there were but five cases, four at Secunderabad and one at Kamptee, of which two were fatal. In Bombay 66, 53 at the stations in Central India already mentioned, 11 at Poona, and 2 at other places; 54 were fatal. The details, distinguishing men, women, and children, appear in the annual tables, but it will be convenient to summarize them shortly here:—

Cholera in the European Army of India in 1872.		Strength.	Admissions.	Deaths.	Ratio per 1,000.	
					Admissions.	Deaths
Bengal ...	Men	36,372	584	389	16·0	10·7
	Women . .	3,830	90	61	23·5	15·9
	Children ...	6,597	143	109	21·7	16·5
Madras ...	Men	11,447	4	2	·4	·2
	Women ..	1,477	1	...	·7	...
	Children ..	2,810	...	...	...	..
Bombay ...	Men	10,998	46	36	4·2	3·3
	Women ...	1,328	9	9	6·8	6·8
	Children ..	2,376	11	9	4·6	3·8

As a whole, the women and children suffered more than the men, but a reference to the detailed tables will show that results in this respect varied greatly at different stations.

Statistics of European Army generally bear out the history of the epidemic among the general population.

28. The statistics of the European Army, shown, as a whole, in Statement J, fully bear out the general accuracy of the history of cholera among the people over those portions of the country to which they refer. We have the prevalence in the eastern districts and the immunity enjoyed over the exempted

tract. One remarkable feature in the record is the occurrence of the disease at hill stations. In no previous epidemic have the troops quartered in them suffered so generally. Chuckrata, Subathoo, Dugshai, Kussowlie, and Murree were all attacked, and at the three last the outbreaks were severe.

Among the Native Troops.

29. Among the Native troops in Bengal, as shown in Statement K, there were 377 cases, of which 247 were fatal. The ratio of admissions per 1,000 was 7·5, and of deaths 4·9. The most severe outbreak was early in the year among the men returning from the Looshaie Expedition. At Meean Meer, Peshawur, and Kohat also there were many cases, but as usual the sepoys suffered very much less than the European troops. Excepting the places above mentioned, the cases in no instance exceeded ten.

Among the Prisoners.

30. The prisoners, as a rule, preserved a remarkable immunity during the year, as may be seen on reference to Statement L. The disease among them was most severe in Behar. At Fyzabad there was a violent outbreak. The central jails at Meerut and Lahore also suffered to some extent, and there were smaller outbursts at Umballa and Roopur, but, as a whole, the cases equalled only 8·8, and the deaths 3·9 per 1,000, a result which in an epidemic year must be regarded as very satisfactory and affording a pleasing contrast to the experience of former times.

Necessity for careful investigation into the circumstances of outbreaks.

31. So far, the facts have been stated very generally, but in order to afford means of replying to the questions suggested in the opening paragraphs, it is essential that the circumstances attending the various outbreaks should be carefully examined. In order to collect all the information that could be obtained, I visited during last cold season many of the places which had suffered and enquired into every fact which suggested itself as of importance. The medical officers, both civil and military, aided the enquiry in every way in their power, and I also received valuable assistance from the local Sanitary Commissioners who accompanied me through their respective provinces. Dr. Douglas Cunningham had at the same time an opportunity of joining in the investigation and of acquiring information regarding Upper India which cannot fail to be of value to him in the special cholera enquiry in which he and Dr. Lewis are engaged. Reports from medical officers have in some instances supplemented the information collected on the spot, and where I was unable personally to investigate the circumstances of the outbreak they contain all the data available.

Notes on 108 outbreaks given separately.

32. The materials derived from these sources have been thrown together as "Notes on individual outbreaks," which will be found at the end of this report. With regard to them it is to be observed that they are intended to be, as far as possible, an accurate record of facts. All the facts which seemed to be of any importance have been entered, and some, indeed, have found a place, not because they seemed to be of moment, but because stress was laid on them by the medical officers by whom they were narrated. These notes are intended to be a body of evidence, and as they relate to 108 different outbreaks, the facts recorded afford a fair basis for forming conclusions. The medical officers are the witnesses, and all I shall attempt to do is to sum up the evidence.*

Facts only recorded in them, not opinions.

33. But, before doing this, I must explain that mere opinions have not been collected or recorded as evidence. It has not unfrequently happened that opinions were expressed without any mention of the facts in the outbreak on which they were formed. But, even where this objection does not obtain, it seems very clear that the circumstances of any one outbreak are quite insufficient for forming any sound conclusions. It is of some consequence that the scope of the local enquiry should be understood and distinguished from that of the general enquiry. Both are important, both are in fact essential to complete the proper investigation of an epidemic, but it is quite impossible that both can be successfully

---

* Except as regards the troops, it must be understood that the "Notes" refer only to those places which I visited, and in which I was able to make personal enquiries into the circumstances of the outbreak. The detailed history of cholera among the general population I must leave to be recorded by the local Sanitary Commissioners.

performed by any one person. The great object of the local enquirer should be to observe and record facts with the greatest care. For this purpose he must commence before the outbreak, and he must continue his observations not only during the outbreak, but also after the outbreak has ceased. He has no opportunity for forming correct opinions, simply because he has no exact knowledge of what is occurring at the same time in other places. It is only when the histories of all the outbreaks have been put side by side and compared that any basis can be framed for forming right conclusions. And this can be done only when the general enquirer has collected all the facts regarding the epidemic in all parts of the country, so far as they can be ascertained.

Mode of arrangement of Notes.

34. As explained in the remarks which immediately precede the notes of outbreaks, the narrative regarding each is divided into seven different sections. Section I contains a very few words of description of the place where it occurred; in section II are given the details of the outbreak; in No. III are related all the facts bearing on the questions of importation and communication; No. IV is devoted to the little information which is available regarding the meteorology; No. V is a short account of the local conditions; No. VI describes the preventive measures adopted and their apparent result, and No. VII embraces the statistics concerning the history of the place as regards cholera in former years. The various outbreaks are numbered from 1 to 108. Any reference which may be made can thus be easily traced, and the particular evidence discovered. An arrangement similar to that adopted in the notes may be conveniently followed in discussing the facts which they contain. Omitting the first sections in all of them as containing no matter requiring any further comment, the details of the outbreaks as given in sections II may first be briefly considered.

Section II.—Details of the outbreaks: points deserving attention.

35. The points under this head which chiefly demand attention are the dates of first cases, the periods of prevalence among different communities at the same station, and the statistics of diarrhœa and fevers both before and during the time of the outbreak. The facts regarding each of these, as they relate to different regiments and other bodies of men under careful observation, supply evidence of great importance.

Isolated cases early in the year.

36. Early in the year isolated cases occurred at many of the stations in Upper India. At Allahabad on the 25th March, the 3rd and 19th April. At Benares on the 8th and 9th April in the Royal Artillery, and on the 11th in the Buffs. At Meerut on the 12th April, but the man belonged to the Peshawur Mountain Battery returning from the Looshaie Expedition. On the 14th another man of this Battery was attacked at Lahore. On the 22nd April one of the 5th Lancers at Sealkote. In the week ending the 12th April a native soldier at Jhelum. In Agra on the 6th May, and at Cawnpore on the 8th May, but in both these instances the first case was the commencement of the outbreak. At Lucknow, on the 10th of May, in the fort. On the 16th a death from cholera in cantonments. In Lahore a case in the lunatic asylum on the 12th May. In Peshawur on the 7th. In the fort of Shubkuddur on the 8th. In Murdan on the 26th. The nine cases in the 1-11th Regiment at Morar, the only ones at the station, occurred on the 18th June. On the same day the first suspicious case appeared among the troops at Rawulpindee. At Abbottabad a sepoy returned from leave was attacked on the 7th June.

Periods of prevalence.

37. For the periods of prevalence at different stations, I must refer to the details given in the notes and to the statistical tables showing the monthly admissions from cholera among both European and Native troops and also among the prisoners. It will be seen that the violence of the epidemic over a very large area fell in the months of August and September. This remark applies to Fyzabad, Lucknow, Allahabad, Meerut, Phillour, Jullundur, Meean Meer, Dugshaie, Murree, and Kohat. At Kussowlie the outbreak which commenced in July continued severe in August. At Cawnpore and Agra the greater number of cases occurred much earlier—in May and June, while in Peshawur the troops did not suffer till October.

Prevalence among different communities at the same station.

38. The fact that the epidemic over so large an area attained its greatest violence at or about the same time in many places, separated from each other by hundreds of miles, is of great interest in an epidemiological point of view, and has an important bearing on the question of its diffusion; but I shall not dwell on this, but rather consider what is perhaps of even greater practical importance,—the history of different communities at the same place in relation to the outbreak. In the course of the notes, several tabular statements are given, showing that, as a rule, the incidence of the disease was confined in all of them to much the same period, and that its rise and fall seemed to obey one general law. In some the phenomena are more striking than in others. At Fyzabad the Infantry were attacked first, but the Artillery suffered most during the few days when the disease was most active in the 26th Regiment. At Allahabad the general influence of the epidemic is illustrated by the cases which occurred in the 2-19th Foot on the 25th March, the 3rd and 28th April; by those in the Royal Artillery on the 8th, 9th, 12th, 13th, and 16th April, which, though not recorded as cholera, were of a very suspicious character; and by those in the district jail on the 27th and 28th of the same month. In May again there are cases on the 3rd, 4th, 6th, and 17th in the 2-19th; in the Royal Artillery on the 11th; in the 33rd Native Infantry from the 1st to the 14th, and one case in the Central Prison Guard on the 16th of the same month. The general character of the influence is illustrated just as strikingly by its absence as by its manifestation. From the 17th May to the 27th July not a case is recorded among the troops or other communities under strict observation. On that date the outbreak commences in the railway barracks; on the 30th July there is a suspicious case in the Royal Artillery, followed by others on the 3rd, 5th, 17th, and 22nd of August and 22nd September. On the 4th August the second outbreak in the 2-19th commences. On the 6th August the district jail is attacked; on the 12th commences the second outbreak in the 33rd Native Infantry. Between the 12th August and 21st September nine deaths occurred among the civil European residents.

Evidence of a general influence at Allahabad.

Illustrated by the cases of Deyrah, Meerut, Meean Meer.

39. Or take the case of Deyrah, where, as may be seen from the tabular statement, the disease commences in the city and cantonments, and ceases again on almost the same day. Or the case of Meerut, where the outbreak in the different regiments, the bazaar, and the city is circumscribed within very much the same time, and the rise and fall of the disease in the cantonments accords in a singular manner with its rise and fall in the city. Or not to multiply instances, take the striking facts recorded in the statements for Lahore and Meean Meer. At Anarkullee, which is a populous suburb of Lahore, the disease appears first; one or two cases are reported early in May, some of them doubtful. But when the outbreak is fairly established, it is singular to observe that the two places continue to suffer side by side until on one and the same day the last deaths ascribed to cholera are recorded in both. The second of the two statements regarding Lahore and Meean Meer supplies other very striking facts, bearing on the distribution of the disease among the different regiments in camp and cantonments, and also the bazaars of Meean Meer, as compared with the deaths in Lahore and Anarkullee. In all of them when the disease ceased in the city the outbreak was practically at an end.

Illustrated at Peshawur and Kohat.

40. But evidence of a general influence is, if possible, even more strikingly exhibited at Peshawur and Kohat, as may be seen by reference to the statements given in the notes regarding them. In all sections of the community at Peshawur the violence of the disease is confined to 20 days. In Kohat the same fact is shown. On the 20th August it shows itself in three different quarters. By the end of September it had disappeared from six different corps which had been attacked, from the sudder bazaar, the city, and the jail, not to mention the neighbouring villages. The violence of the outbreak here also is limited to a period of little over 20 days.

Exceptions to this rule.

41. No doubt there are exceptions to this rule. In some cases particular sections of the community escaped even in the same place where others suffer heavily. There is nothing more remarkable regarding cholera than its localization in particular quarters

of a place and even in particular buildings. Again it may happen that one body of men suffer at one time, while another body, at or near the same place, does not suffer till some time afterwards. Instances of this have been rare in the past epidemic. The only one that occurs to me is that of the Fyzabad Jail, which was not attacked till 25 days after the disease had left cantonments.

Diarrhœa generally prevalent during outbreaks.

42. As regards the prevalence of diarrhœa during the outbreaks, experience somewhat varies. In most of the places where cholera was severe cases of diarrhœa were frequent. This was observed at Meerut, Kussowlie, Phillour, and more strikingly still at Meean Meer, especially in the 37th Regiment. In the head quarter party on moving into camp there were 70 applications for astringent medicine in one night out of a strength of 389 men, and this prevalence continued more or less marked during the whole time of the outbreak. At Peshawur also diarrhœa was common, in many cases attended with cramps and vomiting. At Lahore before cholera appeared it had been observed that cases of fever frequently were complicated with purging and vomiting. At Murree, on the other hand, although the outbreak was sharp, diarrhœa did not prevail to any extent. At Ferozepore, although there was only one case that presented the symptoms of cholera, it is remarkable that diarrhœa was epidemic in the 39th Regiment. During the first week of August immediately following this case, there were from 60 to 70 applications for astringent medicine daily. There can be little doubt that under such circumstances diarrhœa represents merely a mild form of cholera.

Cholera conferred no immunity from fevers.

43. It has been supposed that the presence of cholera affords a protection from fevers, but the history of the epidemic is altogether opposed to this conclusion. In many of the cantonments which were severely attacked fevers increased with the outbreak, and continued very prevalent during it. The statistics regarding Allahabad, Meerut, Meean Meer, Mooltan, and Peshawur may be cited in illustration of the truth of this remark. And it is to be observed that they but imperfectly represent the extreme prevalence of fevers, for when cholera appears, no trifling cases, as a rule, are admitted into hospital. At most of the places fevers continued severe after cholera ceased. At Mooltan, where there were only three cases of cholera, the men were so prostrated from fevers that it was considered advisable to move them into camp at the commencement of the cold weather—a change which was attended with excellent results.

Many questions must be deferred.
Age of children attacked.

44. There are many other questions which naturally fall within the scope of this section, such as the comparative prevalence of the disease among those living in upper and lower stories, among the married and unmarried, the temperate and intemperate, or how far the attacks seemed to be influenced by age or length of service, but in regard to some of these matters, the data are insufficient, in others they point to no definite conclusion. Others again, however interesting, may be deferred for after consideration. One remarkable fact, however, regarding the ages of the children who were attacked with cholera may be mentioned, as it has perhaps a practical bearing which is not now apparent. Of 118 children who died from the disease, only one was under four months of age. During the first two years of age, deaths from cholera were comparatively rare. The disease was most fatal among those of from two to three years. It would be interesting to know the distribution of attacks according to age, but the nominal rolls of cases are not complete.

Discrepancies in minor details.

45. Before leaving the subject of this section, it may be observed that slight discrepancies in the account of the different outbreaks are, to a certain extent, unavoidable. The narrative, for example, given in the notes includes many cases of cholera among Staff Sergeants and others who are not entered in the weekly returns of regiments and who do not therefore find a place in the statistical tables. Again, the dates of cases are not unfrequently given differently in different records. A man comes into hospital with diarrhœa which developes into cholera. It then becomes a question whether his case should be entered as one of cholera from the date on which he was first admitted, or from that on which his symptoms

became more severe. The dates of attack again yield daily statistics altogether different from those founded on the dates of admission into hospital. For those reasons, slight discrepancies may be found in the following pages, but they are only trivial and in no way affect the great questions at issue. If the nominal register of all cases of cholera, devised by the Army Sanitary Commission, were regularly kept, even these trivial differences would be obviated.

Sections III. Facts regarding importation and communication.

46. The sections in the notes which are numbered III contain the evidence regarding importation and communication—a class of facts which are of great importance, and which it will be necessary to examine somewhat in detail. Was the disease imported by human agency into the several communities attacked, and once imported, did it spread by contagion? The 108 different communities which are entered and numbered in the notes may be divided into 25 cantonments, each taken as a whole, 52 regiments or portions of regiments taken separately, 20 jails, 5 civil communities, 2 cities, and 4 districts. The cantonments which are taken as a whole either contained only one regiment or body of men, as Dugshaie and Kussowlie, or were garrisoned by a small force, like the various forts, or suffered little from cholera, as was the case at Benares. Among them also is included Nowshera, which escaped altogether, for the history of this station is important in reference both to the events of 1872 and the experience of former years. The five civil communities consist of the East Indian Railway establishment at Allahabad, the civil residents at that station, St. Peter's College at Agra, the Lawrence Asylum at Sunawur, and the Simla Sanitarium. The two cities are Umritsur and Peshawur, and the four districts, Jubbulpore, Delhi, Goojranwalla, and Goojrat. As already explained, I shall deal only with the facts. Mere opinions have not been entered, nor will they be referred to. The only question is—what evidence has been adduced of either importation or communication, and what value is to be attached to this evidence as a whole?

Importation could not be traced in any one of the 100 communities under careful observation.

47. The 97 bodies of troops and prisoners comprised in the 25 cantonments taken as a whole, the 52 separate regiments or portions of regiments, and the 20 jails supply the most valuable data, because they represent bodies of men under constant and careful medical observation, and to these may be added the East Indian Railway establishment at Allahabad, St. Peter's College at Agra, and the Lawrence Asylum at Sunawur, making a total of 100. In no one of these could the appearance of cholera be traced to importation. In not a few of the cantonments, as will be shown in a subsequent paragraph, the circumstances under which the first case occurred amongst the troops were such as to render it very improbable that the disease had been imported. The same remark applies to the jails. At Sehore the first person attacked in the first outbreak was a mendicant, just arrived from an infected locality, and in the next some sepoys returning from a quarter where cholera was prevailing, but there is no evidence to connect them with the cases which subsequently occurred. In the Benares Central Jail some facts came to light which led at one time to the suspicion that the disease may have been brought in from without, but they did not bear investigation. The circumstances connected with the only case in the 20th Hussars at Umballa, and its possible connection with the arrival of a man from Kussowlie 20 days previous, are quoted in the notes exactly as recorded by the medical officer, but they are not seriously advanced as evidence of importation. Within a few hours of this man of the 20th Hussars being attacked, an Artilleryman was seized—two out of the only four cases which occurred among the European troops at Umballa. At Goonah, a place which is not entered in the notes because only one case of cholera occurred among the troops there, the solitary seizure, which took place in May, is attributed to the fact that the man had been at an outpost near which an infected detachment of Scindiah's men had encamped, "but the sowar states that he did not visit any of the men of the detachment." Giving every weight to the circumstances narrated in each of these cases, it is still quite correct to state that in not one of the 100 bodies of troops, prisoners and other communities which were under careful medical observation, and particulars regarding which are recorded in the notes, could the appearance of cholera be traced to importation.

Districts and towns generally left out of consideration, as it is almost impossible to ascertain the facts in them.

48. The two special civil communities not already included in the total of 100 need hardly be considered. At Simla there was only one case in the settlement—an imported case. By some this would be quoted in support of the theory of importation by human intercourse, but it is no proof of an outbreak being due to importation, which is the point under consideration, for no one else was attacked. Of the districts and cities, Delhi and Umritsur may be omitted, as they have been entered merely to supply a link in the history of the epidemic. No importation could be traced in either, nor was it even suspected. The districts and towns have generally been omitted in the enumeration of outbreaks supplying any evidence in this investigation, because in such communities it is almost impossible to ascertain the facts. Had all these places in which no evidence of importation could be obtained been counted as so many instances of no importation having been traced, the number of apparent proofs in this direction would have been much increased.

Examination of the facts regarding supposed introduction into the Jubbulpore district.

49. As all the districts and towns are thus generally omitted, the narratives regarding Jubbulpore, Goojranwalla, Goojrat, and the city of Peshawur into which it is stated that the disease was imported might have been left out also, but as the only object in view is to ascertain the truth, the story of the supposed introduction of cholera into these places may be briefly examined. The disease is supposed to have been introduced into the district of Jubbulpore in the first instance by a pilgrim from the Ajoodhea fair in Oudh. On the 7th April the fair was broken up, because cholera had appeared in it. This old woman, by name "Dohka," is said to have been taken ill with vomiting and purging at Ajoodhea on or about the 9th April, but not seriously, for she was able to walk over 100 miles to Allahabad. Thence the party proceeded by rail to Sleemanabad, and from that station Dohka is said to have walked 12 miles to her home, where she arrived with the others on the 27th April. On the 29th another woman of the party who had been "in constant attendance on Dohka" was attacked, and died on the 2nd May. But there is no evidence that Dohka really had cholera before she reached her village; indeed it is quite clear that she had not or she could not have walked 12 miles to her village, not to speak of the 100 miles from Ajoodhea to Allahabad. She died afterwards, on the 6th May, it is said, "with all the symptoms of cholera," and this is not at all improbable, as meantime several of the people of the village had been attacked, and of these it is stated that one at least "had had no communication with the returned pilgrims."

Other instances from Jubbulpore are cited in the notes, but the mere narration of the facts, as related in the notes, is quite sufficient to show how very far short they fall of affording any proof of importation.

Into Goojranwalla.

50. In the Goojranwalla district the evidence merely amounts to this, that the first known case was a traveller who was attacked on the day of his return home from an infected district, and that four other cases followed within a few days. With one exception, there is no reason to believe that any actual communication had taken place between the traveller and those who afterwards suffered. It is believed that the medium of contagion was the drinking water, but on this point I shall reserve any remarks for a subsequent paragraph, when the whole of the evidence on the water theory will be considered.

Into Goojrat.

51. The story of the Mahomedan priest who is said to have brought cholera into Goojrat is very open to question. He was taken ill immediately on his arrival from Lahore where cholera was prevailing, and died on the 6th August. The original account stated that "on the 7th no less than ten persons were attacked, *most* of whom were friends of the deceased, and had remained present with him during his illness." As the whole evidence hinged on whether any had been attacked who had held no communication with him, further inquiry was made at my suggestion, and it was then reported that *all* of them had been with him. The inquiry was made through native officials, and although they may be correct, there is reason to doubt whether the data collected after such a lapse of time can be depended on. I mention the matter, however, not in order to throw discredit on the statement, but to show the importance of investigating the

facts most minutely at the time, and also how very difficult, if not impossible, it is to learn what actually occurred among the general population. It is to be noted, moreover, that the mortuary register shows one death from cholera in the Goojrat district in May and two in July. It is quite possible that these entries are incorrect. Other instances of supposed importation and communication in the Goojrat district are cited, particulars of which are given in the notes, but it would occupy too much space to discuss them in detail.

Into Peshawur.

52. The case of supposed importation into the city of Peshawur will hardly bear investigation. The native police officer to whose arrival it is attributed came into the city surreptitiously on the night of the 4th October from the quarantine camp between Peshawur and Kohat, but no connection can be established between him and the attacks which followed. Two persons in the city were seized within a few hours of his arrival, and so far as could be ascertained, they had had no communication with him. None of the people in his own house suffered. If the cases among the European troops in the fort on the 1st were cholera-cases attended with severe vomiting and purging, and one of which proved fatal in ten hours, or if they were due to the same cause or causes which produce cholera, then the whole story of the jemadar is of little importance. Or if these cases on the 1st were not cholera, what is to be said of the isolated attacks in the city and cantonment in May to which no suspicion of importation attaches?

Supposed spread by pilgrims from Hurdwar.

53. As the epidemic has been attributed in more than one report to the pilgrims returning from the Hurdwar fair, it will be well to examine very shortly what are the facts bearing on this point. On reference to the notes regarding Roorkee, it will be seen that there was no outbreak of cholera at the fair. Only two cases were seen there, of which one was fatal and two occurred among the pilgrims at Seharunpore. Next come the facts which are recorded in the notes on Umballa. The first case known in this district was one of the pilgrims who was attacked at Jugadree on the 14th April. This town contains 11,600 inhabitants, but no other death from cholera was reported in it for four months. Altogether there were only five during the year. At Belaspore, Sadhowra, and other places which are mentioned, deaths of individual pilgrims are recorded. In some, one or two of the residents died also about the same time, but no outbreak follows in any one of them, and there is no evidence that the residents attacked had had any communication with the pilgrims. At Munnee Majra and also at Roopur where the disease was more severe, there are discrepancies on material points and a want of proof to connect the outbreaks with the pilgrims. In the south-west portion of the district cholera appeared about the same time, although there is no suspicion of importation in this direction. In the neighbouring district of Kurnal it had appeared even earlier. But to trace this particular band of Jummoo pilgrims upwards, the next place where they are heard of is Sealkote, and here they showed no signs of the disease. On the 22nd May news reached Sealkote that cholera was severe at Jummoo, but as this is not in British territory, there is no registration of deaths, and no information of any value can be obtained from the Cashmere authorities.

Some confusion as to what constitutes evidence of importation.

54. Cases are frequently cited, in support of the idea that cholera is spread by importation, in which persons have been attacked within a few days of their arrival from an affected locality. But this fact is no evidence that cholera is diffused by human intercourse. Persons may contract disease in one place and show the first symptoms of it in another hundreds of miles distant. The evidence to prove spread by importation must show that other cases followed and that these cases were connected with, and due to, the imported case. And to state the facts fairly and fully all the instances must be given in which imported cases were *not* followed by any other cases, for these instances are just as important and as necessary for forming a right conclusion as those in which the importation seems to have been the cause of the outbreak.

Special danger from cholera to pilgrims and travellers; but Hurdwar has very rarely suffered.

55. In dealing with travellers and especially with pilgrims, it must also be remembered that hungry, weary, very dirty and crowded together, as they so often are, they are in the very circumstances calculated to render them susceptible to cholera, if cholera be about. Fatigue, error of diet or strong

emotion, as was exemplified in many cases in this epidemic, all render the person liable to attack. Considering the favorable conditions which they present for the propagation of disease, the wonder is that pilgrims do not suffer more frequently. But it would be altogether a mistake to suppose that in the upper parts of Northern India, the Punjab, for example, cholera generally or even frequently follows in the track of pilgrims. The Hurdwar fair is sometimes spoken of as if it were a notorious fact that year by year it has formed the great centre from which the disease radiated; but, so far from this being the case, the fair at Hurdwar has been singularly exempt from cholera. In 1783, there was a severe outbreak, but this is the only mention of cholera in the early years. In 1857, the pilgrims suffered; but with this exception the disease appears to have been unknown among them from 1854 to 1866. In 1867 there was the great outbreak which has been described in the Fourth Annual Sanitary Report. From 1867 to 1873, the annual fairs have passed without any sickness, beyond one or two isolated cases. Why the large gathering at Hurdwar, in spite of the susceptibility of its composing elements, should so frequently escape; whether it be due to the early time of year at which the fair assembles, or to the geographical position of the place, or to some other cause, it is not my purpose now to enquire. For the present it is sufficient to note the fact.

The general distribution of the epidemic does not accord with the idea that it was spread by man.

56. But leaving details regarding individual communities, is there any thing in the general history of the epidemic which favors the idea that the disease was distributed by man? The mere fact that we have large areas of either complete or comparative exemption sweeping along one continuous track is altogether opposed to any such view of the case. The experience of the Central Provinces cannot be explained by it. In 1869, no less than 60,000 deaths from cholera took place there. In 1870, the number was 107. In 1871, it was only 19. In 1872, it rose to 1,592. Allowing a mortality of 50 per cent. there were 3,200 cases last year, furnishing abundant material, if the contagion doctrine be true, for propagating the disease in many of the districts, and yet excepting in Nimar there can hardly be said to have been any epidemic. The same fact is even more strikingly shown in the western districts of the Punjab, Montgomery, Mooltan, Mozuffergurh, Dera Ghazee Khan, Dera Ismail Khan, Jhung, Shahpore, and Bunnoo, where individual cases of undoubted cholera occurred, and yet the returns for these districts are almost blank.

It was not propagated along high ways of communication.

57. Nor is there any evidence that the disease was carried and disseminated along the great lines of communication. On the contrary, in the early part of the year, it was propagated along the eastern districts of the North-Western Provinces and Oudh, where there are no Railways, and the means of communication are very slow. There is no slow advancing spread. Immense tracts suffer in common. Or to take another illustration. From Rawul Pindee it did not advance along the trunk road to Peshawur; it is next heard of at Kohat, 100 miles to the west, although the intermediate country is sparsely peopled and the traffic very small. It was not till a month later that Peshawur suffered; and Nowshera, which is actually intersected by the trunk road, altogether escaped, nor has it ever suffered to any extent in former epidemics. The fact that the well-elevated hill stations almost always escape, and the exceptions to this rule which occurred in 1872, are alike inexplicable on the theory of human intercourse. Kussowlie is only 9 miles from the plains, with which there is constant communication, and yet for the 28 years from 1845 to 1872 there is no record of any outbreak of cholera at Kussowlie. With the single exception of 1867, when the disease was chiefly confined to the native servants, the oldest inhabitant cannot remember the occurrence of cholera at Simla, excepting in a very few isolated cases, most of which were imported.

The disease did not travel more rapidly than it used to do when there were no railways.

58. Important evidence on this question is afforded by the history of epidemics over Northern India, in these days of railways, compared with the experience of former years when there were no railways. Does cholera travel any quicker now than it did then? Compare the results of 1869 and 1872 among the European troops at Cawnpore, Allahabad, Agra, Meerut, Um-

balla, Kussowlie, and Meean Meer with what they were in the great epidemics of 1845, 1856, and 1861, as shown in the following statement :—

Stations.	Years.	Strength.	Admissions from Cholera.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Cawnpore ...	1845	1,944	...	...	5	4	...	100	15	8	22	1	1	...	156
	1856	479	...	...	...	...	...	...	6	...	...	...	...	...	6
	1861	1,230	...		1	...	8	9	10	19	...	...	1	...	48
	1869	1,040	...	...	...	...	...	1	9	10	...	...	...	...	20
	1872	1,107	...	...	...	...	22	8	...	...	...	...	...	...	30
Allahabad ...	1845	248	...	...	...	...	...	2	9	1	...	...	...	...	12
	1856	*	...	...	...	...	...	...	...	...	...	...	...	...	...
	1861	1,390	...	...	...	1	5	2	25	12	...	2	1	...	48
	1869	879	...	1	27	9	14	15	11	40	...	...	...	...	117
	1872	1,378	...	...	1	3	5	...	...	49	1	...	...	...	59
Agra ...	1845	1,063	...	...	...	4	6	1	...	1	4	...	...	...	16
	1856	...	...	...	...	...	...	160	45	1	...	...	...	...	206
	1861	1,220	...	...	...	...	...	1	103	8	1	1	...	...	114
	1869	895	...	...	...	...	...	...	...	...	...	...	...	...	...
	1872	1,399	...	...	...	...	10	15	5	3	3	...	...	...	36
Meerut ...	1845	2,954	...	...	...	2	2	...	2	29	114	4	2	...	155
	1856	1,610	...	...	...	...	...	...	6	73	...	...	...	...	79
	1861	2,535	...	...	...	1	1	...	88	27	...	1	...	...	118
	1869	1,421	...	...	...	...	...	...	...	...	8	4	3	...	15
	1872	1,953	...	...	...	...	...	...	...	18	65	...	...	...	83
Umballa ...	1845	2,439	...	1	1	3	3	2	123	227	35	2	1	...	398
	1856	807	...	...	...	...	...	...	...	...	6	...	...	...	6
	1861	1,820	...	...	...	...	...	...	10	57	4	...	...	...	71
	1869	1,332	...	...	...	...	...	...	...	...	...	...	...	...	...
	1872	1,599	...	...	...	...	...	...	...	1	3	...	...	...	4
Kussowlie ...	1845	1,045	...	...	...	...	1	1	2	120	12	1	...	...	137
	1856	901	...	...	...	...	...	...	...	...	...	...	...	...	...
	1861	223	...	...	...	...	...	...	...	...	...	...	...	...	...
	1869	412	...	...	...	...	...	...	...	...	...	...	...	...	...
	1872	991	...	...	...	...	...	...	25	22	1	...	...	...	48
Meean Meer	1845	†	...	...	...	...	...	...	...	...	...	...	...	...	...
	1856	1,576	...	...	...	...	...	...	...	435	65	1	...	...	501
	1861	1,700	...	...	...	...	...	...	...	661	61	...	...	...	725
	1869	974	...	...	...	...	...	...	...	...	...	...	...	...	...
	1872	1,358	...	...	...	...	...	...	‡1	179	5	...	...	...	185

* No European troops. † Not occupied in 1845. ‡ On the last day of July.

A glance at these figures will show that cases occur no earlier than they did before. At Meean Meer, it is worthy of notice that in the epidemic of 1861 the first case among the Europeans was on the 2nd August; in 1872 it was on the 31st July, a difference of two days.

Evidence derived from the dispersion of the boys at St. Peter's College, Agra, who in no instance spread cholera.

59. The history of the boys of St. Peter's College, who were dispersed over the country on the severe outbreak of cholera in that Institution, affords remarkable evidence on this question of importation. The disease appeared among them on the 5th July, and with such violence that by midnight there had been 21 cases and 6 deaths. By the 10th, when it ceased, there had been altogether 63 cases and 34 deaths out of a strength of 176. On the 6th July, 65 of the boys were sent to their friends, either in Agra or other stations, some of them very distant. If cholera be a disease which is spread by human intercourse, nothing could have been more favorable for its propagation. There can be no question that the cause existed in a most virulent form at the College, and yet in no instance did one of the 65 boys, so dispersed over the country, communicate the disease to the homes into which they were received. This is all the more remarkable, because 12 of them were attacked after reaching their destinations, and 5 died, and in not a few instances the overcrowded rooms, occupied by large families, into which they were admitted, were most favorable for the spread of disease. Full particulars of this interesting outbreak are

given in the notes regarding Agra and Allahabad, to which last station a number of them were sent.

European soldiers sometimes the first persons attacked.

60. But to revert more particularly to the history of the troops in 1872, as regards this question of importation, the circumstances under which the first cases occurred among them do not favor the idea that the disease had been imported. In the Fyzabad Cantonment the first case was that of a European soldier. During the outbreak, with two exceptions, no natives were attacked. At Morar, when nine men of the 1-11th regiment were seized on the 18th June, there was no cholera in the Lushkur or in the surrounding country. "There had been no communication with the infected, nor for that matter with an infected district." At Nowgong, before the Artilleryman was attacked, "no case, as far as can be ascertained, had occurred anywhere in the neighbourhood;" no case occurred among the natives of the battery till seven days afterwards, and then there was but one. At Subathoo, the few cases among the troops were the only ones at the station. At Dugshaie, the first case was a European prisoner. At Kussowlie, the outbreak commenced with the seizure of one of the soldiers. In the Jullundur Cantonment the first person attacked was a child belonging to the 54th regiment. At Ferozepore, the only case that assumed the appearance of cholera was a man of the 39th regiment. At Mooltan, the first case was in the 41st regiment. At Meean Meer, the first case was in the Royal Artillery. The first person attacked at Murree was a man of the depôt. In the fort of Attock there was no case among the natives. At Peshawur the first case was that of a sepoy on the 7th May.

Is there any evidence that the disease was communicated from the sick to the healthy?

61. But it may be argued that the sources of contagion are so numerous that it cannot possibly be traced. It may be conveyed by one of the numerous native servants who are prompted by self-interest to conceal its appearance among either themselves or their families. It may be communicated through the water or through the milk or through a thousand different ways which it is impossible to discover. To such an argument it might well be replied that if regiments and jails do not afford a suitable field for investigating this question of importation, where is such a field to be found? But fully admitting that the history of importation, even if it has taken place, may elude all inquiry, what light is thrown on it by the facts regarding the spread of the disease once it has commenced? Have the cases which came under observation proved centres from which the disease has infected others? Do they afford any evidence that the persons attacked have multiplied a poison which produced in others the same deadly symptoms from which they themselves suffered?

General immunity of the attendants.

62. This point may be tested first by the experience of those who came in direct contact with the sick. A Civil practitioner died of cholera at Allahabad, but as he was not in the service of the Government the particulars of his case are not recorded. Of all the medical officers in public employ, not one was attacked, except an Assistant Surgeon attached to the 2-19th regiment at Allahabad, who was suffering from dengue, and had not attended a single case of cholera. In the notes, particulars are given of the seizures among attendants, and it will be observed that the number is very small; very often they escaped altogether. Of this there are many striking instances. For example, of 40 native attendants at Fyzabad none were attacked; not one of the arge number employed with the different regiments at Lucknow; not one out of 70 native servants at Dugshaie; not one at Jullundur. Further examples will be found at Meean Meer, Peshawur, and other places. Indeed, excepting at Allahabad and Kohat, the cases among attendants were confined to one or two isolated attacks.

The apparent exceptions at Allahabad and Kohat do not support the contagion-theory.

63. The particulars regarding the attendants at Allahabad show that the seizures were to be attributed rather to the locality in which the men lived than to the fact that they were brought in contact with cases of cholera. Of 30 Europeans so employed in the 2-19th, five were attacked, but they all

lived in the same barrack by themselves, and this was not vacated on the occurrence of the first case, because it was assumed that it was due to contagion. The five seizures took place in five days, just when the outbreak was at its height in the regiment generally. These men had been employed in Hospital for periods varying from three to six days. The 25 who escaped had been engaged in the same duty for from 26 to 38 days. The occurrences at Kohat are also to be explained by the locality which the men occupied, for after attendance they were allowed to return to the lines which the regiment had vacated, because of the outbreak of cholera. It was only in the 3rd Punjab Infantry in which this arrangement was followed that the attendants suffered to any extent.

Remarks on cases of supposed communication.

64. In the course of the account of different outbreaks, cases are cited by the medical officers as evidence of communication, and every case of this nature which came to notice has been recorded. It would take up too much space to discuss them in detail, and I shall therefore confine myself to a few very general remarks regarding them. In the first place, it is to be observed that if the disease spread by contagion, the evidence of its having done so is very meagre. The cases of supposed communication which are advanced are strikingly few. In many of the outbreaks not a single instance can be adduced. And in regard to the instances which are adduced, many of them are altogether opposed to the idea of contagion. A mother and child, for example, or other two members of a family, are admitted from the same quarter within a few hours of one another, and it is concluded that the one contracted the disease from the other. But the facts rather point to their having both contracted it together in the same locality. Where different members of one family are attacked it must be remembered that they are often subject to like conditions, not only as regards their dwelling, but the other circumstances under which they live. Moreover, grief at the loss of a relative, the fatigue, want of sleep, irregular meals, and other privations incidental to nursing the sick are all depressing, and render the person exposed to them more liable to attack. All these must be weighed and considered before evidence of communication of cholera from one to another can be accepted.

Nature of the evidence required to prove contagion.

65. The character of the evidence required to establish the contagious nature of cholera is not sufficiently appreciated. Every person attacked after having come in contact with a case of cholera is often quoted as an undoubted instance of the contagious nature of the disease. But if this procedure were adopted with regard to any disease, to malarious fever for example, evidence could easily be accumulated to prove that it spread from man to man. The proof of the contagious nature of cholera or of any other disease is only to be made out by showing that persons who have come in contact with those suffering from this disease have suffered in a *greater* proportion than those who have not. The fact of a medical officer or a hospital attendant being attacked with cholera is no proof whatever of its contagious nature. *Attendance on a cholera case cannot confer immunity from the epidemic.* Cases must be expected among the hospital establishment as among others. Again, although every instance in which a person is attacked after being in contact with a case of cholera is cited by some as positive evidence of contagion, all those instances of persons under similar circumstances who escape are set aside as affording only negative evidence of no value. But as a matter of fact, the one set of facts is just as important as the other. It is only by taking both together,—by comparing the proportion of attacks among those who have been brought in contact with cholera cases on the one hand, with that among those who have not been brought in contact with such cases on the other, that any proper conclusion can be drawn. Adopting this standard of comparison, there is certainly no evidence in the events of the epidemic of 1872 to support the opinion that cholera is a contagious disease.

The doctrine of contagion acted on to an extreme extent during the epidemic.

66. It will no doubt be answered that cholera is not contagious in the sense in which other diseases are contagious. Mere contact is attended with no danger; the poison, it is said, lies in the discharges, and takes effect chiefly through the water-supply. The facts bearing on this water theory I shall

examine under Section V, which relates to local conditions. But in the meantime I would observe that, although the contagious nature of cholera in the ordinary acceptation of the term is generally denied, in more than one station the persons attacked were treated as if they were suffering from the most contagious disease, according to the usual meaning of the phrase. Parents have been prevented from attending their children, husbands their wives; the nearest relatives have been separated, and where the disease proved fatal have never seen each other again. Not to speak of the inhumanity of such a procedure, there can be no question that it is productive of much mischief, that it is calculated to engender the greatest alarm, and to cause a depression of spirits which ought especially to be avoided. There is no evidence to show that there is any risk in attending on the sick, *when removed from the locality in which they were attacked.*

Section IV.—Meteorology. Information scanty.

67. All the information afforded regarding the atmospheric conditions which obtained during the time of the outbreaks at the several stations is given in the fourth sections of the notes, but it is very scant. In many cases no meteorological observations were recorded. In several instances, a severe storm of wind and rain immediately preceded the outbreak. This was the case at Allahabad, Chuckrata, Jullundur, Sealkote, Meean Meer, and Kohat. But this was by no means the rule. At Lucknow, there had been no rain for ten days when the Europeans began to suffer. The prevalence of easterly and south-easterly winds is noted at most of the stations, at Fyzabad, Lucknow, Cawnpore, Shajehanpore, Umballa, Mooltan, Meean Meer, and Peshawur, and the close oppressive feeling which so often attends a continuance of easterly winds was complained of. At Morar, there was "a blast from the east" four days before the outbreak in the 1-11th. At Agra, on the other hand, a fierce hot wind blew from the south-west. A peculiar heavy mist or fog was observed at Fyzabad, Deyrah, Phillour, and Murree. Flights of locusts were seen in many places. In some, as at Roorkee, nothing abnormal was observed. Occasionally different accounts of the same place are somewhat conflicting. At Meerut, for example, in one report, it is stated that the prevailing wind was south-west, in another that when the west wind blew cholera decreased, and increased again with a change to the east.

General meteorological characteristics of the year in Upper India.

68. The general meteorological characteristics of the year will be described at greater length in a subsequent section of the annual report, when more complete information has been obtained. Meantime, it may be observed that in Bengal Proper the rains of 1872 were unusually light. At Calcutta, the fall was 15 inches below the average. In the North-Western Provinces no special peculiarity was observed. The rains set in at the usual time, and were abundant, though somewhat less than in 1871. In the Punjab, on the contrary, "the rains were much heavier than usual, the Delhi District receiving 10 inches, the Kurnal 12, Hissar 16, Umballa 18, and Loodianah 23 inches more than the average. Jullundur got 20, Hoshiarpore 12, and Dhurmsalla no less than 38 inches more than the average of the last five years, while, curious to remark, the two Sub-Himalayan stations, Goordaspore and Sealkote, show a deficiency of 9 and 17 inches, respectively."*

Want of a normal standard of comparison.

69. In the above paragraphs regarding meteorology, I have merely recorded facts which have been mentioned by different observers. Before we can say what connection, if any, they had with the epidemic, it is essential to know what constitutes a normal year, and also in what respects and to what extent the phenomena of 1872 varied from this standard. But unfortunately our information is as yet far too imperfect to allow of any sufficient answer being given to either of these questions. An important contribution to the meteorology of this country has lately been made by Mr. Blanford in his paper on the wind current of Northern India, and I trust that the scheme for obtaining more accurate observations, and bringing them annually into one general view for the whole country, which has been so long under consideration, may soon be put into operation.

---

* Report on the Meteorology of the Punjab for 1872, page 7.

Section V. Local conditions. Their importance in relation to the localization of cholera.

70. The localization of cholera in particular places, even in particular buildings, is one of the most remarkable characteristics of the disease, of which there are many illustrations in the history of the outbreaks in 1872. At Agra, for example, the artillery entirely escaped, although hemmed in between the 65th regiment on the one side and a bazaar on the other, in both of which cholera was prevailing. Still more remarkable is the case of St. Peter's College, in which the boys were attacked with the greatest severity, while the girls in the convent, immediately adjoining, were almost altogether free from the disease. The question of the local conditions under which the different communities existed is a matter of great importance, the conditions of soil, of water level, of drainage, of overcrowding, or other sanitary defect, and in particular of water supply. In regard to soil, the Inspector General of Military Works has, at my request, called for a section from each cantonment showing the various strata from the surface of the ground to the water level and the thickness of each. When these have been obtained, and when the data they afford are taken in conjunction with the rain-fall and the prevalence of cholera, some light may be thrown on the question of how far these soil conditions are connected with the propagation of the disease.

Drainage generally defective.

71. It will be seen from the notes that in many of the stations attacked the drainage was very defective, and, although it may be argued that the soil imbibes little moisture, there can be no doubt that imperfect drainage creates a condition of damp which is specially favorable to the development of malarious disease. Good drainage and proper water-supply are the two sanitary improvements which are most urgently called for. With very few exceptions the troops were well housed; they have had ample space, and the conservancy of the station has been well attended to.

Defects in water-supply, and the water theory.

72. The water-supply for the troops in Upper India is derived chiefly from wells, which are generally sunk close to the barracks, and the water, drawn up by the ordinary native leathern vessels, is distributed in skins. Orders were issued some years ago to provide at least one of them on each of the lines occupied by a European regiment with a pump; and last year metal pails were sanctioned for conveying the water from the pump to the barracks. It will be seen that in one or two places pumps were at work, but the pails had not any where come into use, and it may be said that when cholera broke out the old system practically remained as it was before. To this system the whole sickness and mortality among the troops has been attributed, not by the medical officers in charge of them, for almost invariably they express an opinion that no connection could be established between the water and the outbreak; but the favorite theory of the day is that any person affected with cholera multiplies within himself the poison of cholera, that this poison is emitted in the discharges, and that wherever and whenever a community is violently attacked by cholera the outbreak has been caused in the main by water which has been contaminated by these discharges. Is this theory in accordance with the facts of 1872?

The water theory irreconcilable with the geographical distribution of the epidemic.

73. To commence with, it is to be observed that there is no evidence to shew that cholera evacuations in any instance found their way into the water supply: but admitting that there is ample facility for this occurring, is the general history of the epidemic taken in connection with that of other epidemics, or are the details of individual outbreaks both in themselves and as compared with those of former outbreaks, explicable on such a supposition? . The geographical distribution of the disease does not favor this idea. The epidemic of 1872, like every previous epidemic, had a geographical distribution. There were certain well-marked and extensive tracts of country which escaped either entirely or in a very great measure. There were other well marked and extensive tracts which suffered severely. There is no material difference in the water-supply of these different tracts, either in the source from which it is obtained or in the means by which it is drawn. It can hardly be supposed that over the one the water was generally defiled by cholera discharges, while over the other no such defilement took place.

With the experience of the same Provinces in different years.

74. The argument is even more forcible when applied to the same extent of country in different years. In the Central Provinces, for example, as has already been stated more than once, there were nearly 60,000 deaths from cholera in 1869; in 1870, there were 107; in 1871, there were only 19; in 1872, 1,592. Is this extraordinary difference to be explained by supposing that in the first of these years the water supply over this great area was generally poisoned by cholera evacuations which it escaped in other years? Illustrations almost as striking could be drawn from the history of the other provinces, all of which seem to be equally inexplicable on the water theory. In many of them there was ample cholera material, if the water theory be correct, for spreading the disease, and yet we have in one a severe epidemic, in another the disease, though widely distributed, is much less prevalent, in a third it is confined to a few cases here and there.

And of individual stations.

75. The same difficulty presents itself in the history of individual stations. Last year, for example, after a long period of exemption, both Dugshaie and Kussowlie suffered severely from cholera; while the adjacent hill station of Subathoo, though at a much lower elevation than the other two, suffered only to a slight extent,—a result the more unexpected, because it has suffered several times when both Kussowlie and Dugshaie escaped, yet the water supply of the one is just as liable to contamination as that of the others. Similar facts can be adduced regarding stations in the plains. At Allahabad, Cawnpore, and Lucknow the wells are of just the same construction as those at Sealkote, Nowshera, or Mooltan. The first-named stations are subject to frequent and severe attacks, the others have in comparison rarely been attacked, and never with any severity.

With the facts of outbreaks.

76. Or let us examine individual outbreaks in relation to this question. The water theory was founded on the fact that among masses of people living in London side by side, and apparently subject to the same influence, except in this one matter of water supply, those supplied from one source suffered far more than those drinking from another. Is there any evidence of this nature? On the contrary, there is no instance in the whole course of last year's epidemic in which any special severity of the disease among any particular section of the community can be associated with the use of a particular water used by that section. In Lahore, for example, there are 1,400 wells, in Anarkullee they are also very numerous, but there is no suspicion that persons using any one of these wells suffered more than others, much less that the severity of the outbreak was confined to those drinking from particular wells. Both here and in the city of Peshawur, where also the wells may be numbered by hundreds, the disease was spread generally among the people. In these places, and in many other instances which might be cited, we find numbers of people drawing from many different sources, and yet all suffering to much the same extent, a result which is hardly reconcilable with the idea that the attacks were caused by any specific poison accidentally introduced into the water supply.

Or the experience of the camps.

77. The experience of the various camps in which the troops took refuge from cholera illustrates this point even more strikingly than what occurred in cantonments. In some places they continued to suffer even where the water was above all suspicion, for instance, at Bara near Peshawur, where the supply was drawn from a rapidly flowing river. In the history of the outbreaks at this station, and also at Meean Meer, we have different camps miles apart drawing from altogether independent sources, and yet suffering severely from cholera. It cannot be said that the disease continued because the influence which had been at work in cantonments still exerted its power, for its cessation in several of them was marked and almost immediate. There is no fact to connect the benefit derived from moving into camp with any change from the use of a water containing cholera discharges to one free from this impurity. The benefit of movement is to be associated with change of locality, not with change of water supply.

No evidence that the disuse of any particular water was attended with disappearance of cholera.

78. In the whole course of the epidemic there is not a single instance in which the cessation of the disease can be attributed to the disuse of any particular water. At Cawnpore, it was said that the shutting up of wells was attended with benefit, but there are no facts to support this conclusion. At

Goojranwalla, as already stated, it was supposed that an outbreak of five cases had been stopped by closing a well; but in this very village, some time after, another outbreak of four cases occurred, no well was closed, and the disease ceased just as suddenly as it had done before,—an illustration of how dangerous it is to connect two events together as standing in the relation of cause and effect without large and very pre[illegible]e evidence.

The almost simultaneous attack of different sections of the community.

79. The almost simultaneous distribution of the disease among the various bodies of men in the same place but drinking from many different sources greatly enhances the difficulty of reconciling the facts with the water theory. Attention has already been drawn to the evidence of a general influence pervading more or less all classes of the population for the time the outbreak lasted. This evidence may be studied in the details regarding all the outbreaks, but more especially those at Fyzabad, Deyrah, Roorkee, Meerut, Dugshaie, Kussowlie, Umballa, Jullunder, Lahore, Meean Meer, Goojranwalla, Murree, Peshawur, and Kohat, in which the statistics for each section of the community are tabulated separately side by side. In some cases the results are more striking than in others; where the epidemic was severe they are naturally more distinct than where it was but mild. Allowance must be made for this variation in the severity of the disease in different places, for the small numbers of which some of the communities are composed and for the distances which in some instances intervene between them. But looking at any of them, it is impossible to ignore the fact that at or about the same time, sometimes on the very same day, several different sections of the community begin to suffer. If all drew their water from the same source, the spread of the disease might be attributed with some plausibility to water contaminated with cholera discharges, but when the sources are many and various, this attempt at explanation altogether fails. Even in a single outbreak it would be a strange coincidence that a number of independent sources of water supply should be accidentally polluted in this way at or about the same time. But when, in order to explain the facts, it is necessary to suppose that this remarkable coincidence should have taken place not only in one but in nearly every outbreak, the supposition involves a series of remarkable coincidences, amounting to an impossibility.

Meean Meer, Peshawur, and Kohat no exception to the difficulty.

80. Meean Meer, Peshawur, and Kohat are no exceptions to this rule, for though the supply for the troops at these places is in great measure from a running stream, there are other classes of the population who draw from altogether different sources. At Meean Meer, for example, while the European troops are supplied from the canal cutting, the Native regiments have wells in their respective lines, the bazaar people draw from wells, and the servants throughout cantonments are also supplied from numerous wells. At Peshawur, the Native troops drink from the stream, the Europeans from two wells, and the city people from several hundred wells. At Kohat, although the use of the stream is more general, the inhabitants of the city and neighbouring villages use wells to a large extent. In all these places the almost simultaneous appearance of the disease in different sections of the community was most marked.

The general rise and fall of the outbreak in different sections.

81. But if the history of the disease in the different regiments and other bodies of people in one station be examined, the difficulty of explaining the facts in accordance with the water theory is rendered greater still, for there is a singular similarity in the results,—a tendency to rise to a maximum in all about the same time, and then gradually to decline. Where very many sources of water supply are concerned, it is hardly possible that the specific poison should not only be first added about the same time, but that it should continue to be added in such a way and at such intervals as to produce a general uniformity in results. The difficulty is all the greater where running streams are concerned, as at Meean Meer, Peshawur, and Kohat, streams of considerable volume and running with some rapidity; and the fact that disease among those drinking from the running stream follows much the same general course as among those drinking from wells, renders it all the more difficult to account for the results on the supposition that it was propagated by cholera evacuations received into the water.

Its disappearance from among them all about the same time.

82. The almost simultaneous disappearance of the disease in the different regiments and other communities in the same place is also very hard to explain on the water theory. In order to account for the facts shewn in the outbreaks, it is necessary to imagine, not only that the different sources became contaminated on or about the same time, that they continued to be contaminated for a similar period, but also that on or about the same time the contamination ceased, and the many sources of supply became comparatively pure or at least incapable of propagating cholera. Or if it be said that the contamination may have lurked in the water skins, or the sand of the filters, or the barrels or any other vessels in which the water was drawn or by means of which it was distributed, it is equally improbable that these various centres of contamination should have been exhausted about the same time.

The pollution of the water supply is always supposed to occur at the time when it is least likely.

83. The similarity in the general history of cholera outbreaks is quite inconsistent with the idea that the spread of the disease was due merely to a series of accidents; but leaving this point as one which can be easily tested by the details in each case, I would observe that there is no relation between the quantity of the so-called cholera material which is available and the results which it is supposed to produce. It will be conceded that the more abundant the material, the greater number of people, in fact, who are suffering from cholera, multiplying and eliminating from their systems this supposed poison, the greater must be the risk of contaminating the water supply. But the outbreak never follows any such law. In Lahore city, for example, taking the number of deaths shewn in the Registration Returns to represent half the number of attacks, 10 cases in June produce 86 in July, while 476 in August produce only 10 in September, and such is the history of the disease not in a few places only, but all over the country. In order to account for the results according to the water theory, the accidental pollution of the many sources of water supply is supposed to occur at the commencement, just at the very time when it is of all others least likely to occur.

The water theory opposed to varying intensity of the epidemic in different years.

84. Again, the varying severity of different epidemics is not to be explained by the water theory. There can be no question that they differ much, not only in the extent of area covered, but also in intensity at individual places. At Peshawur, for example, in 1869, out of a strength of 1,723 European soldiers, 323 were attacked; of 3,380 Native soldiers, 179 were attacked. In 1872, out of much the same strengths, there were only 82 cases among the one and 45 among the other, and this result was due to the fact that the disease was less in all sections of the community, as may be seen from the following comparison of cases of cholera among the Royal Artillery, the two European Infantry Regiments, the two Native Cavalry Regiments, the four Native Infantry Regiments, and the Sappers and Miners, which make up the garrison. None of those which had been there in 1869, it may be observed, remained till 1872. The same marked difference, however, is seen in the jail and city, which have also been added to the statement:—

	1869.	1872.
Royal Artillery	56*	6*
European Infantry Regiment	202*	27*
Ditto	119*	45*
Native Cavalry Regiment	31	6
Ditto	22	6
Native Infantry Regiment	36	13
Ditto	43	5
Ditto	24	14
Ditto	20	5
Sappers and Miners	8	4
Jail	31	1
City	2,642	352

The conditions of water supply in the one year were much the same as in the other. A similar comparison might be made in regard to the troops at

---

* Including men, women, and children.

Kohat in these two epidemics. Other instances again might be given in which the reverse was the case, and the different classes suffered in 1872 more than in 1869. For example, at Fyzabad, there were—

	In 1869.	In 1872.
In Royal Artillery Battery... ...	6 cases	10 cases.
In European Infantry Regiment ...	22 "	50 "
In Jail	3 "	67 "

Many other examples might be quoted to the same effect. It can hardly be argued that in one year all the sources of supply in one place are poisoned by a larger quantity of cholera evacuations, and that in another year they all receive a smaller supply. Nor is there any ground for assuming that these discharges are more virulent in one epidemic than in another.

Difficulty of explaining the facts at Peshawur and Kohat by the water theory.

85. It has been argued in former epidemics that, although the European troops at Peshawur are supposed to drink from the wells, they yet may have received more or less of their supply from the stream, which is notoriously liable to pollution. But if this be admitted, the difficulty of adapting the water theory so as to explain the facts is by no means removed. If the European and Native troops drank from the same water, how was it that the Native troops suffered so very slightly in comparison to the Europeans? It may be said that the native is much more careful and cleanly in his habits, but if the stream is polluted, no amount of care can make any difference. Natives, moreover, drink largely of water, for they drink little else. The attempt to explain the difference by the filtering beds and reservoirs in the European lines, which rather aggravate than diminish the evil, also fails, for the arrangements in use by the Native troops are just as objectionable. The history of the outbreak in the different lines at Peshawur, moreover, does not accord with the idea that the Europeans suffered because they drank cholera-polluted water, for the Royal Artillery at the end of the stream, where the pollution would naturally be greatest, escaped almost entirely. The facts at Kohat also, so far as they are known, are equally adverse, for Chickurkote, the village in which the disease was first seen, is down stream. Jungul-peer-kheyl, at the head of the stream, did not suffer for ten days afterwards.

At Kussowlie parties changing locality, but continuing to use the same water supply, shook off the disease.

86. At Kussowlie we have a remarkable instance of a body of persons who had been attacked with cholera moving out of the station to a neighbouring hill, continuing to draw their water from the same source as before, and yet remaining free from the date of their taking up their new position. The outbreak at Kussowlie was severe. The circumstances of water supply are such as to render the explanation offered by the water theory very plausible, but the instance in point shews that any such conclusion would be hasty. In another point of view the history of this camp is interesting. Communication between it and Kussowlie was constantly kept up. All other supplies besides water were received from Kussowlie. A number of cases of cholera accompanied the detachment when it first went out, and were encamped close to it. Other cases in the depôt, as they occurred, were sent out to this place, but not one of the detachment suffered. The experience of another party at Kussowlie, which moved in a different direction, teaches the same lesson. This party was unfortunate. After a severe storm, in one night out of 90 men 7 cases occurred. The explosion was attributed to the water, but no other supply could be obtained. The camp was moved half a mile further along the ridge on which the party had first pitched; the same water was used, and no more seizures took place.

The severe outbreak at St. Peter's College, Agra, not explicable on the water theory.

87. These instances strikingly support the idea of the localization of cholera in particular localities, dependent not on water but on some other as yet unknown conditions. The history of the very violent outbreak in St. Peter's College at Agra, the most severe known in the whole course of the epidemic, is just one of those cases that should be explicable on the water theory, if the water theory is correct. But it admits of no such explanation. The water used by the boys was drawn from a well common to the college, and a

considerable native community among whom so far as is known no cases occurred. It may be argued that though nominally drawn from this source, in reality it was very likely taken from the College well employed in former years —a well in most dangerous proximity to the old latrine, which is practically a well of filth close beside it. But this explanation accords with the facts no better than the other, for the day boarders, 27 in number, who drank of the same water as the boarders and orphans, and drank largely too,—as I was assured, and as might naturally be expected, in that very hot weather,—all escaped, with the exception of one. Anxious to ascertain the circumstances under which this boy was attacked, I found on enquiry that he was the only one of the day scholars who lived close by—a fact which points strongly to localization, not to water.

No case in India ever recorded in which there is good reason to believe that cholera discharges have caused cholera.

88. So far the argument has been pursued as if it were a fact established beyond all dispute that man multiplies within himself the poison of cholera, and that the discharges contain that poison. But few will admit that these statements have really been established as facts. At the best they are but assumptions in support of which there is very little proof. The history of the epidemic of 1872 certainly lends no countenance to them. Notwithstanding the wide-spread belief in this water-theory, it is a very remarkable fact that in India, where cholera is so prevalent, even in Lower Bengal, where it is always present, no case has ever been adduced in which there is good reason to believe that water contaminated with cholera evacuations really has produced cholera. It would be a mere waste of time to discuss any supposed instance of this nature in which the facts are not most fully and circumstantially related. We must know the exact date and place of the supposed occurrence, the previous history of cholera in the locality, the minutest particulars regarding the persons affected, and a hundred other details which at once suggest themselves as indispensable for the purposes of such an enquiry, and without which it can be of no value whatever. When all these have been furnished and submitted to the closest scrutiny, it will be possible to understand exactly what occurred, and to draw such conclusions as the facts warrant. In such a matter, where the points to be determined are so intricate, and the sources of fallacy so numerous, no vague statement can be admitted as evidence at all; much less can it be accepted as proof. It is almost incredible that, in a scientific question of so great importance, and in which, from the imperfection of the means at our disposal it is so difficult to ascertain the truth, bare assertions altogether unsubstantiated by details—bare assertions such as would not be received by any judicial court, even in the pettiest case that could be brought before it—should not only have been advanced but accepted as conclusive.

The importance of good water not to be confounded with the "water-theory."

89. The facts recorded under this section of the notes are not to be ignored or slurred over. If the water theory is to be upheld, it is not sufficient to refer to the experience of East London or the Broad Street Pump. If it is true, its truth must be generally applicable. But in speaking of water and its connection with cholera, it cannot be too clearly stated that all that has been said refers solely to what has been called the water theory—the views advanced by Dr. Snow to the effect that the discharges contain the specific poison, and that any violent outbreaks of the disease are generally, if not always, to be explained by the fact that this poison has in some way contaminated the water-supply. That the water in many of the places concerned is liable to pollution no one will deny, or that the means of delivering it might be greatly improved. But because the water is liable to contamination it by no means follows that the violence of the outbreaks was caused by a specific poison contained in such contamination, more especially when facts are so strongly opposed to any such conclusion. Of the vast importance of good water as a means for the prevention of cholera, of the necessity of having it drawn from a pure source, and of having it distributed in such a way that it shall be preserved pure from first to last, I shall speak in a subsequent portion of this report. The water theory finds no support in the history of the epidemic of 1872, and it would be a gross exaggeration, as it is a pure assumption to affirm, that the troops and other communities

who were attacked suffered because they drank water which had been contaminated by cholera discharges.

Section VI.—Preventive measures.

90. The next series of facts which deserve attention are those relating to the measures adopted for the prevention of the disease. They may be divided into those taken to prevent its introduction, such as may be considered under the head of quarantine, and those taken to prevent its spread once it had appeared, isolation, disinfection, and movement from the affected locality. Quarantine was attempted in certain cantonments, districts, and towns; but as the facts regarding the cantonments can be ascertained with more accuracy than those in other places, it will be better to consider what occurred in them first. All do not require attention, for in several, either no details are given or the measure was adopted too late, or it was intended not to protect the place attacked but to prevent the spread of the disease to other places, as at Subathoo, Dugshaie, and Kussowlie, or it was abandoned before cholera appeared, as at Phillour.

Quarantine in cantonments.

91. Meean Meer and Murree also may be left out of account, for in spite of quarantine the troops in both suffered severely. Strictly speaking, wherever cholera found entrance in spite of quarantine, this fact alone is sufficient evidence that the quarantine failed, and in this view of the case every cantonment except Nowshera might be left out of the question, for with this exception cholera appeared in every one of them in which quarantine was established. But a certain measure of success has been claimed for the quarantine arrangements, not only at Nowshera, but also at Roorkee, Umballa, Jullundur, Mooltan, Sealkote, Rawul Pindee, and Attock. On what evidence does this opinion rest? If it is founded merely on the fact that all of them were in quarantine, and that all suffered comparatively little from the epidemic, this amounts to no evidence whatever. A mere coincidence of this nature is of little value. But if it can be shown that in previous epidemic years, when there was no quarantine, these places enjoyed the same comparative immunity, the very trifling value of even the mere coincidence is destroyed, and it still remains to be shown that good was really effected in any one of them.

The facts examined at Roorkee, Umballa, and Jullundur.

92. But let us take the places *seriatim*, and examine all the evidence that can be advanced in favor of quarantine. At Roorkee great pains were taken to render the cordon effective to the no small inconvenience of the inhabitants, and yet in no year since it has been a station did Roorkee suffer so severely from cholera as it did in 1872. It will be seen on reference to the table in the Roorkee notes that in the course of the 17 years during which it has been occupied cases have been very rare. Among the Europeans, although the strength was somewhat larger, they never exceeded two in any former year. In 1872, there were seven and several suspicious attacks besides which some medical officers would have returned as cholera. At Umballa, the only evidence to favor the idea that the quarantine had any beneficial effect is that there were only four cases among the troops, but the statistics of Umballa in many of those years in which quarantine was never dreamed of are just as favorable, as may be seen on reference to its previous history shown in the notes. In 1854, for example, there were but three cases among the Europeans. In 1862, out of a larger strength, there were only four. But more to the point still is the fact that in the great epidemic of 1856 there were only six cases among the Europeans and one among the Native soldiers. The same argument applies with even greater force to Jullundur, for the outbreak here in 1872 was severe compared with the general experience of the station in days when quarantine was unknown.

At Mooltan, Sealkote, Rawul Pindee, Attock, and Nowshera.

93. At Mooltan, since 1856, the European troops have suffered from cholera in five out of the 17 years, and in only one of these, 1856, has the number of attacks exceeded three, the number seized in 1872. In 1856, the number was eight out of a small strength. Sealkote again tells the same general history of comparative immunity much more marked in several years when there was no quarantine than it was with quarantine in 1872. In the great epidemic of 1861, for

example, there was but one case. The largest number of attacks among European troops at this station was 14 out of a strength of 1,438 in 1862. Rawul Pindee has nearly always enjoyed as much freedom from cholera as it did last year. The same may be said of Attock. Nowshera altogether escaped in 1872, but cholera has rarely visited this station. In the 1862 epidemic, out of a strength of 722 men, only two were attacked.

At Peshawur.

94. When I was at Peshawur, I heard an opinion expressed that if the quarantine at Attock had not been raised for a few days from the 1st October, the valley might have continued to escape. But there is no evidence to warrant any such conclusion. When cholera did appear, the believers in importation thought they could trace it to Kohat, an altogether different quarter, but even here, as already shown, the case entirely breaks down. To prove importation it is not sufficient to trace the outbreak in October, even if this could be done; it is necessary to go back to and account for the solitary cases in the cantonment, in the city of Peshawur, in the Fort of Shubkudder, and at Murdan in May. And the very suspicious cases which occurred among the Europeans in the Fort of Peshawur on the 1st October also must not be left out of account—cases which, if they were not really cholera, show that the severe fever of the Peshawur valley may assume a character almost, if not altogether, identical with cholera.

Escape of Umritsur without quarantine.

95. In considering if any good result can, in a single instance, be attributed to quarantine, the extraordinary behaviour of the disease as regards particular localities in different years must be remembered, and the impossibility of predicting what special localities will suffer. In 1869, the town of Umritsur was the scene of a very severe outbreak, and much apprehension was felt for this place in 1872. Quarantine, as regards the local trains, was thought of, but was given up as too expensive. There was no restriction on traffic or on communication, which was constant, especially with Lahore. And yet Umritsur practically escaped; seven deaths from cholera were reported out of a population of 136,609 inhabitants. Had quarantine been instituted, the escape would have been attributed to it. In the same way, Meean Meer escaped in 1869—a result which could hardly have been due to a quarantine in which nearly 1,100 passes were issued.

Impossibility of enforcing strict quarantine even in cantonments.

96. Even in a cantonment any thing approaching to a strict quarantine is simply impossible. Hundreds of grass-cutters and other servants must go out and in daily. Supplies must come from without. In many of them the difficulty is increased by the fact that they lie, like Umballa or Nowshera, right on the great high road of communication. The mails must pass, all travellers cannot be stopped, nor can ordinary traffic be arrested without interfering with the whole trade of the country. And in addition to the number of people who must not be stopped, there are the many who cannot be stopped. To place an effective cordon round a large area, such as that contained in our cantonments, is no easy matter, and natives who desire to go in and out can find little difficulty in doing so. Where the police are concerned, a small bribe is generally considered quite sufficient to ensure the breaking of the quarantine. In every cantonment in which quarantine was attempted, there was a general admission that it was not strict, and that it was impossible to make it strict.

Great evils attendant on it.

97. And yet the evils inseparable from any attempt at quarantine are very great. The troops are exposed at the very time that exposure, and especially exposure to the night air, is calculated to prove most mischievous.* A general sense of alarm is created, especially amongst the natives, who are naturally prompted to

---

* At Meean Meer, for example, when cholera threatened, there were 44 sentries posted round the station, and the strength of the guards mounted daily for this cordon, exclusive of the Non-Commissioned Officers and men of the Artillery and 87th Regiment, was 132 Native Troopers, Sepoys and Police. How utterly useless the cordon was, was shown in the sequel. At Umballa for nearly five months 47 sentries surrounded the cantonment, necessitating a daily detail of one Native Officer, seven Non-Commissioned Officers, 42 Troopers, and 45 Sepoys, besides four Police Serjeants and 42 Constables. Yet with all this the entrance of cholera was not prevented.

conceal the disease if it should occur. Trade is interfered with, and, as a natural consequence, prices rise. The exceptional opportunities thrown into the hands of the police inevitably produce oppression. The people huddled together in the quarantine camps, naturally depressed in spirits on account of the measures which, though taken with the best intentions, are most irksome and practically convert them for the time into prisoners, exposed to the weather, and otherwise in great discomfort are placed in the very situation best calculated to favor cholera amongst them. And yet, with all this, the quarantine is a mere name, for the different day's arrivals in the quarantine camp cannot possibly be kept separate from one another. In the notes, especially those regarding Umballa, many of these points are illustrated.

Still greater when it is applied to the population generally.

98. Before a system which entails so many and grievous evils can be tolerated, it must be shown that unquestionable good is derived from it. It rests with the advocates of quarantine to adduce positive proof on this point; but not only is there no such proof, but there is strong evidence to lead to the belief that the quarantine proved an unmixed evil, that it neither stayed the march of the epidemic nor moderated its intensity in the smallest degree. The evils which attend it in regard to cantonments are naturally very much greater when it is applied to towns or rural districts, inasmuch as the people are more ignorant, and the facilities for oppression are often increased by the distance from European supervision. The practice, moreover, which was followed of attempting to isolate villages in which cases of cholera occurred, drawing a cordon round them, and preventing the inhabitants from going out even to cultivate their fields, lest they should spread the disease, is open to grave objections. The whole principle of the rules for the prevention of cholera among the troops is that the disease is apt to stick to localities, and, therefore, that the locality in which it appears should be abandoned as soon as possible, but the procedure above noted forcibly confines the people to the very locality which they ought to avoid.

Now prohibited in the Punjab.

99. There can be no question that the restrictive measures, the quarantine both on the highways and in villages, which were adopted in several of the districts of the Punjab, produced no small discontent. In one district the Commissioner reported that "the people preferred the cholera to the quarantine." Except as regards organized bands of pilgrims, the Punjab Government has recently ordered that no quarantine shall be established without special orders; but it is well that the facts should be recorded, and that the matter should receive prominent notice here, for there are not a few district officers and medical officers also who chiefly, I believe, because they have looked at the evidence from a very limited point of view, both as regards the history of this last epidemic and the experience of particular places in previous epidemics, have come to the conclusion that the quarantine arrangements were most beneficial. The orders of the Government cannot be too widely proclaimed that, except as regards pilgrims, there will in future be no restrictions.

No evidence that in any instance quarantine did good.

100. And for the benefit of other countries it is indispensably necessary that there be no mistake regarding the experience of India in this matter. In a question so intimately connected with the happiness of the human race, it cannot be too widely known that quarantine was tried in the hope of protecting a number of the cantonments in Upper India, that in many of them it signally failed, and that in no single instance is there the smallest reason to believe that it was productive of any good. The direct evils of quarantine are great enough in themselves, but many indirect evils also arise from it, and among these by no means the least is this, that so long as men believe that they can escape from cholera by such means, they will never be fully alive to the importance of the greatest safe-guard—sanitary improvements.

Practical nature of the question to be determined.

101. This question of quarantine is purely practical, and, as such, it must not be mixed up with any merely theoretical considerations. The point to be determined is not whether cholera is spread by human intercourse or not, but whether quarantine

can protect a cantonment or any other community from cholera: whether, even assuming that the disease is spread by man and by man alone, it is possible in practice to keep up such a state of isolation as will prevent its entrance. The believers in contagion not unfrequently argue: Cholera is propagated by human intercourse, therefore quarantine should be established and all intercourse with infected localities prohibited But the last proposition is by no means a logical inference from the first. It may be so in theory, but the question arises, is it possible in practice to maintain such an isolation? The answer must be—it is not possible. And hence it is that most of those who have had experience of the system, including not a few even of those who believe that quarantine if it *could* be perfect would be a complete protection, are strongly opposed to it, for they are satisfied that any such perfect quarantine is an impossibility, that any attempt of the kind can do no good and must be productive of the greatest evils.

These remarks do not apply to the system of isolating new arrivals in Jails.

102. These remarks are not intended to apply to the isolation of new arrivals in Jails which has been carried out for some years in the Upper Provinces under the name of quarantine. It is not quarantine nor would quarantine, in the strict sense of the term, be practicable even in Jails; the segregation of new prisoners is a measure of value chiefly because it attracts special attention to the new-comers, and in practice it has been found useful.

Nor to the special case of pilgrims.

103. Nor do the arguments against a general quarantine apply to the discouragement of fairs and the diversion of streams of pilgrims at those times when cholera threatens, provided these measures are taken discreetly. The conditions under which pilgrims travel and congregate are essentially insanitary conditions, which favor the appearance and spread of disease, and in so far as these conditions are obviated good will accrue both to the pilgrims themselves and to the community in general. The proper conservancy of fairs is a matter of great importance. Warning the people of the serious danger incurred in making pilgrimages especially in epidemic years is also calculated to do good by reducing the number of persons exposing themselves to this danger, and there will be the greater likelihood of attaining this object if it be made known at the same time that, in the event of epidemic sickness appearing among them, all pilgrims may be subjected to detention. Under such circumstances, special arrangements for segregating them, for preventing their streaming through cantonments and cities, for providing proper food, and affording medical aid to the sick are all very desirable. They can be carried out with little or no hardship, and as the time during which they are required is generally limited to a very few days at each place, there is some hope of making them efficient. But this is a very different thing from the quarantine spread over weeks and months, which was attempted in many places in 1872.

Enforced isolation of cases of cholera very hard on the people.

104. In addition to the quarantine the enforced removal of any member, and especially of any female member of a family attacked with cholera to a cholera hospital, which was adopted in some few places, was also most repugnant to the feelings of the people, and regarded as a very grave hardship. It is much to be doubted whether any good was effected by this measure, and much evil was done in this way, that there was the strongest inducement to conceal the disease, and there is no doubt that it was concealed to a great extent. In the many places in which the sick were treated at their own houses, no instance has been recorded in which any evil results followed; there is not the smallest reason to suspect that the disease was spread either within or from these houses. I should like much to see the forcible removal of cholera-sick from their houses also prohibited. At such a time the separation must greatly increase the family distress; the very act of removal is trying to the sick, and takes up the very time when alone medicine can do any good. Harsh measures of this nature, moreover, set the people against everything that is done under the plea

of the public health, and render them averse to all those schemes of improvement which are the only real protectives against cholera. They come in fact to look on the sanitary reformer in the very opposite light from what they ought to do,—as the greatest destroyer of their domestic comfort and happiness.

Movement from the infected locality generally advisable.

105. Leaving isolation of the sick and disinfection among the troops as questions in regard to which it is very difficult to obtain definite data sufficient to decide how far they had any effect in preventing the spread of the disease, the next point to be discussed is movement from the infected locality. The rules regarding the abandonment of buildings or portions of buildings in which cases of cholera have appeared have worked well in many places. Not unfrequently after the change of locality the disease has immediately and altogether ceased. The particulars are fully narrated in the history of each outbreak, and the generally favorable opinion which has been expressed with regard to the action of the rules in this particular will be found to be borne out to a great extent by the evidence. The reports, as regards the effect of the movement even when the men were thereby exposed in camp at a season of great heat, are generally to the effect that no disease seemed to be produced by the change.

Little benefit followed short moves at several of the stations worst attacked.

106. But in certain stations the movements to ground in the vicinity was attended with little benefit. In illustration of this remark may be cited the cases of Allahabad, Meerut, Meean Meer, and Peshawur. At Allahabad, in the camps near the station, cases continued to occur, but the movements to places 30 and 40 miles down the Jubbulpore line of railway were completely successful. At Meerut, the moves, which were all confined to the neighbourhood of the station, were followed by a number of fresh seizures. At Meean Meer and Lahore, the change to the temporary barracks at Bheekawal and Nyaz beg, within ten miles of the cantonment and fort, were attended with excellent results, but as a rule the short moves did little or no good. In places near at hand the troops continued to suffer severely. Instances of this will be found in the history of H. Battery, 8th Brigade, R. A.; of A. A. R. H. A.; of the head quarters of 37th Regiment at Hullokee, Khana, and even at Okara, 80 miles down the line to Mooltan; and of the families at Shalimar. At Peshawur, the movements, all of which were made within the valley, cannot be said to have been successful.

More decided moves for the troops at these stations recommended in June 1872.

107. But these results were very much what had been anticipated. Writing on the 20th June 1872, I recommended that, in the event of these cantonments being attacked, more decided moves should be made, that the troops at Meerut should be sent to Roorkee, those at Meean Meer to Mooltan, and those at Peshawur to Nowshera, or still better to the east of the Indus at Campbellpore. In making these proposals, I referred to the experience of the epidemic of 1869, and to similar recommendations made in my letter of June of that year, written under very similar circumstances to those which presented themselves in June 1872. In 1869, I observed, "the benefits of moving into camp have, I believe, been sufficiently established, but the principle it involves might be carried still further by endeavouring to move away from the infected area altogether. Our knowledge of the laws which govern cholera is not yet so exact as to enable us to say with anything approaching to certainty what the exempted area in any given case may be, but judging from the facts which are available, and setting all theories aside, there is good reason to hope that by moving troops into the neighbourhood of those places which have hitherto preserved such a remarkable immunity from the disease good results would follow. And I would therefore propose for the serious consideration of the Government that in the event of European troops being attacked at the stations in which an epidemic is anticipated, they should be moved to one or other of the localities indicated, in which experience has shewn that they are more likely to escape."

Probable effects of such movements, if they had been made.

108. It is only right to consider what would have been the probable results of such movements if they had been carried out in 1872, so far as they can be judged by what actually occurred. At Roorkee, as has been already stated, cholera was more severe than it has been known in any previous year, but still the cases among the troops at that station were comparatively few. Out of a strength of 521 there were 7 cases; while out of 1,953 at Meerut, there were 83 cases. In the party of Artillery which moved from Meean Meer to Hurruppa, 116 miles down the line of railway, there were two cases almost immediately on arrival; only one was attacked afterwards. Gogaira, 87 miles off, was not occupied till late in the outbreak, and no opinion can therefore be expressed as to the results, which were very successful. At Mooltan, just as has happened on many former occasions, the epidemic was represented by two or three cases among the troops. But what is perhaps of more importance in forming any conclusion in the matter we have the remarkable fact that while 629 deaths from cholera were registered among the people in the Lahore district there were only 5 in the Montgomery, or Gogaira district, as it was formerly called, and only 2 in the Mooltan district. As regards the proposed movements at Peshawur, we know that while the valley suffered severely, both Nowshera and Campbellpore were entirely free. There is every ground, therefore, for believing that if the movements recommended in June 1872 long before the epidemic reached Meean Meer and Peshawur had been carried out, many lives might have been saved.

Good followed even the partial movement at Meean Meer.

109. But that benefit was derived from even slight change of locality is amply testified by the number of attacks among those who were left in the station of Meean Meer. In the 7-13th Royal Artillery, of 8 men who remained, 5 were attacked. Of 7 men belonging to the head-quarters, 2 were attacked. In regard to the 37th regiment, there is some discrepancy in the figures, but whichever account is correct the fact remains that those in the cantonment of Meean Meer suffered much more severely than those who left it.

Principle on which movement is founded.

110. The experience of another epidemic confirms the opinion that much advantage may be derived from movement, and at the same time illustrates the principle on which such a procedure is recommended. When cholera appears in a barrack, the inmates are removed to another locality; they are taken from a place in which the disease is known to be present to one in which it is hoped that it may not be found to exist. Sometimes a slight change is sufficient to secure this object, but where the epidemic is severe, the chances are against any such slight change being successful, and then it becomes advisable to make a more decided move in the direction in which the experience of former years and the history of current events show to be less under the prevailing influence. The whole procedure is founded on the peculiar localized character of the disease. It rests on no doctrines of contagion, nor can the benefit derived from it be explained on any such doctrine.

Theoretical objections interfered with movement.

111. The doctrines of contagion and importation, however, interfered with the more decisive moves recommended. At Peshawur, for example, it was feared that removing the troops to the other side of the Indus might spread the disease down the Trunk Road, and on this account not only was the move not made, but a party of time-expired men also were detained on this ground. But the general direction of cholera is upwards to the north-west. There is not a single epidemic on record in which the disease commencing above pursued its course downwards to the south-east. And until specific instances have been adduced in which troops flying from a cholera-stricken cantonment have been the means of spreading the disease, merely theoretical objections should not stand in the way of a measure which has so often been attended with excellent results, and which, if carried out more fully, might be productive of even more signal good.

Rules generally approved. Suggestions for trivial modifications.

112. Before leaving the question of preventive measures, it will be well to enquire whether any modification is desirable in the "rules regarding the measures to be adopted on the outbreak of cholera among European troops." The general and indeed almost universal testimony of medical officers is to the effect that they are good and that they have worked well. Difficulty has sometimes been experienced in acting up to them in the matter of complete separation of those attacked owing to the want of sufficient hospital establishment. It has also been suggested that a distinct ruling should be issued as to whether the relations and friends of those attacked may be allowed to attend them. For my own part I believe that the rules in the matter of isolation and disinfection are more strict than need be, but as they can do no harm, and involve no hardship if reasonably carried out, it will be better to leave them as they are, so as to meet the views of those who think otherwise. The idea that cholera, at all events as we see it in India, is a contagious disease, that it is spread by contact with the sick, should be discouraged as much as possible, both because it is opposed to all experience, and also because it causes needless alarm. In regard to movement by rail, Rule 41 says "it will be better to select the day than the night." At Meean Meer, the reverse was found to be the case, as the men in the day suffered much from the heat. Without altering the rules in such minor details, it may be understood that on this matter the local authorities guided by circumstances should act on their own judgment.

Section VII.—Previous history.

113. The statistics of the previous history of the different cantonments have been added, *first*, because they are necessary for a comprehensive consideration of the epidemic of 1872; and *secondly*, because they contain important information which cannot fail to prove of interest to medical officers and help to a right understanding of the outbreaks which may come under their observation. The figures for the earlier years are taken from Dr. Bryden's Report on cholera, a mine of facts which will well repay careful study; those of the later years are from his Tables, which have appeared in the Annual Sanitary Reports. They have been merely re-arranged by stations for more convenient reference.

Any remarks apply only to cholera in India.

114. So far I have endeavoured to record the facts accurately and to summarize the evidence impartially. Any remarks which have been made, it must be understood, refer only to the history of cholera in India, and more particularly to the history of the past epidemic. My object has not been to write an essay, much less a controversial essay, on cholera, but merely to endeavour to narrate what has occurred in this country, and to consider how far this accords with the theories of the day. The field is wide enough for observation. But wide as it is, there can be no question that the history of epidemics, after they leave India, is just as important as their history while they are within its borders. It is only, as I have before remarked, by collecting every fact that can be gathered regarding an epidemic from its commencement to its close that we can be in a position even to attempt to understand the phenomena which it presents. The collection of facts from all countries attacked, facts observed and narrated apart from and unbiassed by any theory, is of the greatest importance. If we only knew *all* the facts, the framing of correct conclusions would be easy.

Improvement of mortuary statistics required.

115. In India, although much progress has been made in ascertaining the history of cholera, and the account of an epidemic now is very much more complete than it could possibly have been even but a few years ago, much remains to be done. The mortuary statistics of the general population, although they have furnished most valuable data regarding the distribution and relative intensity of the disease, are still imperfect. Their improvement must, no doubt, be a matter of time, but earnest effort on the part of all concerned is indispensable for the attainment of this great object. The prohibition of those restrictive measures directed against cholera, which have been referred to in a previous paragraph, and which have induced the people to conceal the disease if generally promulgated would remove one obstacle out of the way.

Accurate and unprejudiced record of facts.

116. The accurate record of the facts of every outbreak, so far as they can be ascertained by patient and careful enquiry, must form the foundation of all advance in our knowledge of cholera as of all other diseases. Its sudden and fatal character has made it appear as if cholera were more mysterious than any other disease, but it is just as difficult to account for the epidemic spread of other diseases, of epidemic malarial fever for example, or of small-pox, as it is of cholera. In approaching the difficult questions connected with any one of them, the first essential is to record the facts unswayed by prejudice and uninfluenced even by the opinion of the highest authority. This worship of authority, which is so common, is not altogether unproductive of mischief. One medical officer, for example, whom we may call A, meets no fact in support of contagion or the water theory, but he believes in the authorities who support these views, and he concludes that, although he has failed to find any such evidence, B, C, D, and every other medical officer have been more fortunate. B does the same; so do C and D, and so on. The consequence is that events are often viewed through an ideal, and therefore distorted, medium, and much valuable evidence is lost.

Danger of reasoning from analogy.

117. Another obstacle to progress is the mode of reasoning by analogy, which is not uncommon. Cholera, for example, is supposed to be analogous to small-pox, and on this a superstructure is based which has no real foundation. Small-pox, it is argued, is a contagious disease, and spreads only by contagion. Cholera belongs to the same class of contagious diseases, therefore it also spreads by contagion, and by contagion only. But do we know that small-pox spreads only by contagion? Its annual rise and fall in this country recurring steadily year after year, its comparative dormancy for a term of years, and then a year of epidemic violence, are facts altogether inexplicable on the doctrine of contagion, and prove incontestably that the law of contagion is not the law which governs the spread of small-pox. The obscure problems connected with the epidemic prevalence of disease are to be solved not by fancied analogies, but, like every other truly scientific enquiry, on the evidence. Meantime, there may be sufficient data only to show our ignorance, but to sweep away error is a great step to progress.

Necessity for careful induction.

118. It will, no doubt, be said, as it has been said before, if it should be proved that cholera is not spread by human intercourse, if man does not multiply the poison of cholera, if the evacuations do not contain that poison, and do not spread it through the water supply, then we virtually go back to the same state of ignorance as we were in a hundred years ago. To this I would reply that if we are on the wrong road, the sooner we go back the better, but the question is not what will be the consequence to any opinions. That is a very small matter. In writing the history of the cholera of 1867, I was much impressed with the apparent proof in favor of the distribution of cholera by the pilgrims; but increased experience would lead me to hesitate before I accepted much that was then recorded as evidence. Even then I pointed out that human intercourse failed to explain all the facts. The only point of importance is—what is the truth? Facts cannot be too carefully scrutinized before they are accepted nor conclusions too carefully drawn from them.

Sanitary improvements the only protection against cholera.

119. But a still more specious argument which has been used is this, if non-contagion doctrines are accepted—If we are to believe that cholera is borne by the air or carried in some other mysterious unknown way, we are utterly helpless, we can do nothing, all progress is stopped. No argument could be more fallacious. It is the doctrine of contagion which has prevented progress. So long as men believe that all that is required to escape attack is to shun the sick, what interest can there be in sanitary reforms? The great lesson which the history of this epidemic and of all other epidemics teaches is this, that all we can do to diminish cholera is to carry out these reforms, and that these reforms will do much. On this great point I have frequently insisted, and have again and

again pointed out the necessity for them, more specially in the matters of drainage and water supply. In the report on the cholera of 1869, I remarked* "it is only by a thorough system of sanitary improvements that any decided results can be obtained, improvements which shall not be confined to military cantonments only, but which shall embrace native cities and the country generally. As regards cantonments, I have already indicated what are the chief wants. The importance of thorough drainage has been repeatedly brought to notice, as well as the necessity of improved means for the supply, and still more perhaps for the distribution of water * * * Taking the general history of this epidemic into account, there is little reason to conclude that it was spread over the vast area which it covered by means of water which had been poisoned by cholera evacuations, but the very great value of a pure water supply, as a preventive of the disease, can hardly be over-estimated, nor the great importance of deriving it from some source removed from human habitations, and beyond the smallest suspicion of contamination." I can hardly write in stronger language now, but the experience of another year of cholera in Upper India adds additional weight to what I wrote then.

Illustrated by experience.

120. But it may be argued—"Where is the evidence that sanitary improvements have really prevented cholera? Is there any fact in the whole history of the past epidemic to prove that clean places escaped, and that dirty places suffered? On the contrary, is it not true that our European troops who are housed in stately piles, on whom every care is bestowed, suffer far more than the poor inmates of native hovels, who live too often in circumstances of filth and of over-crowding, and every other sanitary defect?" In considering this question, there are several matters which must not be left out of sight. In the first place, the influence of race and habit cannot be ignored. The native child is reared in circumstances under which the European child would almost inevitably perish. The native exposes himself bare-headed to a fierce sun, which the European with his head well covered finds it difficult to withstand; and will walk many miles a day on a diet which would be regarded by the white man as most wretched fare, with which his frame under such hard exercise would never be satisfied. And if in these matters there is such a marked difference between the two races, is it surprising that there should also be a marked difference between them in regard to matters of health, and that, however much his susceptibility may be aggravated by his own act, it still remains a fact that the European is specially prone to severe tropical disease, that he needs more care than the native to preserve health, that he could hardly, indeed, exist under such conditions as those in which they often live and prosper. And again, it must be remembered that the *distribution* of cholera, as may be proved beyond all doubt, is not regulated by conditions of filth or cleanliness. Large tracts of country often escape in which the people are no cleaner than those in others, and even within the epidemic area villages escape, while others, to all appearance very much the same, suffer severely. But we know by experience that much may be done by sanitary improvements to affect the *incidence* of cholera in particular localities, and to diminish its violence. Of this there could be no more striking example than the history of the jails in Upper India. In 1860, to go no further back, 223 prisoners died of cholera in the North-Western Provinces out of an average strength of 14,468. In 1861, out of 15,662, there were 524 deaths from this cause. In 1863, out of much the same strength (15,526), there were 156. In the epidemic of 1867, out of 15,107, there were only 31 deaths; in that of 1869, out of 18,587, 88 deaths; and in that of 1872, out of 16,788, only 43. A very striking example to the same effect is given by the Sanitary Commissioner of Madras regarding the jails in that Presidency.† Compare the annual mortality from cholera in the years from 1861—1866 with that in the years from 1867—1871.

---

* Paras. 195 and 196.

† Annual Report of the Sanitary Commissioner for Madras for 1871, page 106.

Ratio of annual mortality in the jails of Madras Presidency per 1,000 *of average strength.*

YEARS.	Cholera.	YEARS.	Cholera.
1861-62	26·3	1867	0·8
1862-63	23·0	1868	0·2
1863-64	15·6	1869	4·3
1864-65	21·3	1870	1·5
1865	30·0	1871	0·7
1866	25·5		

The occurrence of such marked diminution in the deaths from cholera, and it is to be seen also in regard to other diseases, in conjunction with great sanitary improvements, is no mere coincidence. Whatever opinions may be held on theoretical questions, *the* great work to be done is, to perfect and extend such improvements, not only in jails and cantonments, but among the people generally.

Direction of further enquiries.

121. Such are the practical deductions which I would draw from the history of cholera in India. The directions in which further scientific enquiry should be instituted are being carefully considered, and points as they arise are being taken up as far as possible by Drs. Lewis and Cunningham, in the course of their special work. A more thorough examination of the local conditions under which outbreaks occur, into the conditions especially of soil and atmosphere, is much required, and a much more complete investigation into the general meteorological phenomena which accompany epidemics than has yet been possible. A favorite argument against the air-borne theory of cholera is that, if the cause of the disease were borne in the air, few, if any, would escape. I do not write in support of the air-borne theory, but would remark that conditions of atmosphere may vary greatly in different localities within the same area, and such variations, coupled with differences in the soil conditions, may account for the results. Dr. Douglas Cunningham's investigations show that even the microscopic objects found in the air of neighbouring places present remarkable differences. His valuable paper on atmospheric organisms I hope to annex as an Appendix to this Annual Report.

Pettenkofer's views deserve special attention.

122. Among these local conditions, which demand much closer investigation than they have received hitherto, special mention must be made of those to which so much importance has been attached by Professor Pettenkofer. Observations, in order to test this theory, have now been taken for some time in many parts of India, but, for reasons which have been detailed in previous reports, the data procured have not been so accurate as to warrant any decided conclusions being drawn from them; and hence it is that although the question was not lost sight of in the investigation of the facts regarding the outbreaks at different places in 1872, no precise information can be given in regard to it. Further and more exact observations are required, and the best means of attaining this end are now under discussion. Meantime, the state of the question seems to be this—that while there is not sufficient evidence to warrant the statement that Pettenkofer's views are correct, there is still less evidence to show that they are incorrect. In Pettenkofer's admirable papers on cholera, some of which have been translated and made known to the profession in India through the pages of the "Indian Annals," it is clearly shown that the matter well deserves further attention.

123. There are many questions of great interest which have been left out of consideration, because they are more of a theoretical than practical nature. Such, for example, as whether man unaffected by the disease may yet bear with him from an affected locality the cause of cholera, which, for want of a better name, we call the germ, and if so, whether this germ is capable of multiplying itself either in the soil of the place to which it is brought, or whether, although incapable of multiplication, the quantity imported may yet produce limited results. These and other matters must be left for future observation. There are no precise facts in the late epidemic which bear specially on this subject.

Many questions unconsidered.

124. In conclusion, I desire to express my acknowledgments to the many officers whose assistance has been so valuable in the course of this inquiry, especially to the medical officers, both executive and administrative, whose willing aid has enabled me to prepare a more complete account of the epidemic of 1872 than has ever been prepared of any previous epidemic of cholera in Northern India.

Acknowledgments to medical and other officers.

NOTES ON INDIVIDUAL OUTBREAKS.

Explanatory remarks.

The communities to which these Notes refer have been arranged in the following order—the same as that adopted in the Annual Tables:—

No.	Community.	Page.	No.	Community.	Page.
1	Dinapore	38	55	Umballa Jail	91
2	Benares Cantonment	40	56	Phillour	92
3	„ Central Prison	40	57	Jullundur Jail	94
4	„ Blind Asylum	41	58	„ 54th Regiment	94
5	„ Lunatic Asylum	41	59	„ Detachment, 12th Bengal Cavy.	95
6	„ District Jail	41	60	Ferozepore	97
7	Fyzabad, 26th Regiment	44	61	Mooltan Cantonment	99
8	„ Royal Artillery	45	62	„ Jail	99
9	„ Jail	46	63	Sealkote, 5th Lancers	100
10	Lucknow Fort	48	64	„ 58th Regiment	100
11	„ Military Prison	48	65	Umritsur	101
12	„ Royal Artillery	48	66	Lahore Lunatic Asylum	103
13	„ 21st Hussars	49	67	„ Female Jail	104
14	„ 62nd Foot	49	68	„ Central Prison	104
15	„ 1-17th Regiment	50	69	„ Fort	105
16	„ District Jail	50	70	Mean Meer, H-8th Royal Artillery	107
17	Cawnpore, 8th Regiment	51	71	„ A-A, Royal Horse Artillery	107
18	„ Royal Artillery	52	72	„ 7-13th Royal Artillery	108
19	„ 35th Native Infantry	52	73	„ 37th Regiment	109
20	„ Jail	52	74	„ 18th Bengal Cavalry	111
21	Allahabad, Royal Artillery	55	75	„ 24th Native Infantry	111
22	„ 2-19th Regiment	55	76	„ 17th Native Infantry	112
23	„ 33rd Native Infantry	56	77	Goojranwalla	116
24	„ East Indian Railway	56	78	Goojrat	118
25	„ Civil Residents	56	79	Jhelum	118
26	„ Central Prison	56	80	Rawul Pindee, 36th and 70th Regiments	120
27	„ District Jail	56	81	„ 25th Punjab Infantry	120
28	Shajehanpore	59	82	Murree	121
29	Chuckrata	60	83	Attock	122
30	Deyrah	61	84	Nowshera	123
31	Roorkee, 109th Regiment	63	85	Hoti Murdan	124
32	„ Sappers and Miners	63	86	Peshawur City	124
33	Meerut, Royal Artillery	65	87	„ Jail	125
34	„ 4th Hussars	65	88	„ Royal Artillery	126
35	„ 105th Light Infantry	65	89	„ 1-6th Regiment	127
36	„ 8th Bengal Cavalry	65	90	„ 55th Regiment	128
37	„ 3rd Native Infantry	65	91	„ 15th Bengal Cavalry	130
38	„ Central Prison	69	92	„ 16th Bengal Cavalry	130
39	Delhi	71	93	„ Sappers and Miners	130
40	Agra, 65th Regiment	71	94	„ 15th Native Infantry	130
41	„ District Jail	73	95	„ 21st Native Infantry	131
42	„ St. Peter's College	73	96	„ 26th Native Infantry	131
43	Morar	77	97	„ 36th Native Infantry	132
44	Nowgong	78	98	„ Fort	132
45	Jubbulpore	79	99	Shubkudder	135
46	Sehore	80	100	Abuzai	135
47	Simla	81	101	Cherat	135
48	Subathoo	81	102	Kohat, Hazara Mountain Battery	135
49	Dugshaie	82	103	„ Garrison Company Artillery	135
50	Sunawur	84	104	„ 1st Punjab Cavalry	135
51	Kussowlie	85	105	„ 2nd Seikh Infantry	135
52	Umballa, Royal Artillery	88	106	„ 4th Seikh Infantry	135
53	„ 20th Hussars	88	107	„ 3rd Punjab Infantry	135
54	„ 12th Bengal Cavalry	88	108	„ Jail	139

As a rule, only those communities have been numbered regarding which exact particulars can be ascertained, such as regiments, jails, &c. With a few exceptions referred to specially in the report, towns and districts are not numbered. Any reference to an outbreak made in the body of the report, may easily be found by looking in the above list for the community concerned. With a view to facilitate reference, the history of the outbreak in each community is divided, as far as possible, into seven separate sections, an arrangement which has also been followed in the report. It may be observed that where the outbreak has been but trivial, the whole cantonment is frequently dealt with as one community, but where it has been severe, the different regiments are taken separately.

Section I contains some information regarding the situation of the cantonment or other place concerned, the strength of the garrison, the number of other inhabitants, the area of the

Notes on outbreaks. Explanatory remarks.

district, &c., &c., a few details such as are calculated to assist the reader, and especially the reader who has no personal acquaintance with India, in tracing the epidemic on the map, and also in understanding the circumstances under which the occurrences detailed in the subsequent sections took place.

Section II contains the details of the outbreak, as well as particulars regarding the prevalence of diarrhœa and fever.

Section III details any facts bearing on the questions of importation as accounting for the commencement of the outbreak, and of communication as accounting for its spread.

Section IV is devoted to any meteorological phenomena which have been observed and reported by the Medical Officers.

Section V contains information regarding the local conditions, especially as concerns drainage, water-supply, and barrack accommodation.

Section VI deals with the preventive measures adopted more especially with quarantine, where this was attempted, and with movement from the affected locality.

Section VII contains the statistics of previous years so far as they can be supplied. The figures are all taken from Dr. Bryden's tables; those for the earlier years from his work on Cholera, and those of later years from the tables appended to the Annual Sanitary Reports. With reference to these, it is to be observed that up to 1868 the figures for European troops refer to the men only. Since 1869 the women and children also are included. As the strength, however, given for each year embrace only those among whom the cholera cases have been entered, the comparison is very little affected by this change.

Where years are left out altogether in these statements of previous history, it will be understood that they were free from cholera. The same rule applies to the omission of European troops, Native troops, or prisoners in any particular year. It only remains to observe, by way of explanation, that, where any section is left out, no information bearing on the points to which it refers has been obtained.

No. 1, Dinapore.

DINAPORE.—In the valley of the Ganges; seven miles to the west of the town of Patna. The garrison consisted of a battery of artillery, the 96th Foot, and two regiments of natives. The bazaar population is returned as 16,120.

II. Details of the outbreak.—Among the European troops only two cases of cholera occurred, one in July and one in December. Among the Native troops there were also two, one in May and the other in September. Surgeon John Tuson, F. R. C. S., says that, "from the beginning of December to about the 15th, cases of cholera were continually occurring in the bazaar, and occasionally in cantonments, and on the 18th it culminated by 14 or 15 cases in one day." Among the bazaar people there have been recorded three deaths from cholera in the last week of June, sixteen in July, one in August, one in September, and five in December.

III. Importation and communication.—Dr. Tuson says, "it was apparent that the disease had been imported from Patna," but beyond the fact that cholera seems at the time to have been prevalent in Patna, no evidence is adduced in support of this statement.

VI. Preventive measures.—" Wood-fires were burned at 50 yards apart throughout the bazaar, and powdered sulphur sprinkled on them. * * * These fires were continuously burned during the nights of the 15th December and two days afterwards;" "contemporaneously with the fires being burned the cholera disappeared."

VII. Previous history.—The statistics of Dinapore show cholera year by year from 1826 to 1872, but its prevalence of late has much diminished from what it was formerly.

Statement of cholera at Dinapore, 1826 *to* 1872.

YEARS.		Average strength.	NUMBER OF CASES.												Total cases.	Total deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1826	European Troops -	940	...	...	...	...	32	5	3	3	...	1	...	...	44	13
	Native „ -	8,333*	1	4	2	10	14	21	9	6	...	2	3	1	73	22
1827	European Troops -	1,211	1	3	...	1	6	8	...	...	4	6	1	1	31	5
	Native „ -	6,594*	1	1	2	4	5	...	...	2	3	19	26	...	63	17
1828	European Troops -	1,605	3	...	...	34	51	14	17	7	4	2	...	...	132	29
	Native „ -	6,478*	2	...	5	9	9	21	4	2	...	1	2	9	64	20
1829	European Troops -	1,864	...	...	71	72	34	30	4	4	2	6	...	...	223	35
	Native „ -	not given	...	1	42	2	4	2	1	1	1	5	2	1	62	6
1830	European Troops -	1,737	...	1	2	5	1	...	2	1	...	1	...	2	15	...
	Native „ -	4,626*	3	...	3	1	1	...	1	1	1	1	...	1	13	2
1831	European Troops -	914	...	...	...	...	67	...	2	...	1	1	...	...	71	10
	Native „ -	4,160*	...	...	1	...	9	5	8	3	6	1	4	...	37	11

* The strength in the Dinapore Circle.

Notes on outbreaks, Dinapore.

Statement of Cholera at Dinapore, 1826 *to* 1872—continued.

Years.		Average strength.	Number of cases.												Total cases.	Total deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1832	European Troops	1,163	...	...	3	4	4	1	1	...	...	...	...	...	13	1
	Native "	3,457*	2	...	2	2	2	2	...	1	1	...	...	1	13	2
1833	European Troops	957	...	...	...	2	8	7	2	...	1	...	...	...	20	5
	Native "	3,927*	3	...	1	3	2	4	2	2	3	...	3	1	24	4
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2†
1834	European Troops	811	...	...	2	...	1	...	7	3	...	...	2	...	15	6
	Native "	3,806*	1	2	3	1	1	1	6	3	10	...	5	...	33	13
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
1835	European Troops	1,029	...	1	2	8	1	3	1	...	...	...	...	...	16	4
	Native "	3,034*	...	...	...	4	2	1	8	4	2	1	1	...	23	6
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1836	European Troops	972	...	...	9	9	4	1	3	4	4	2	4	1	41	4
	Native "	3,169*	...	...	2	3	1	1	1	6	6	...	2	2	24	10
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1837	European Troops	934	...	3	3	47	4	4	1	2	3	...	2	1	70	14
	Native "	3,189*	...	...	...	27	7	9	5	17	5	3	1	...	74	23
1838	European Troops	845	...	...	4	2	4	2	6	2	...	...	...	...	20	4
	Native "	3,560*	3	1	3	2	2	4	5	...	1	1	...	...	22	4
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
1839	European Troops	748	...	...	1	...	...	2	...	1	2	1	1	...	8	2
	Native "	4,560*	2	...	2	7	...	9	7	3	2	1	...	2	35	13
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
1840	European Troops	741	...	3	1	3	4	3	10	2	1	...	1	...	28	6
	Native "	4,673*	...	1	3	3	8	2	1	18	7	6	8	1	58	19
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18
1841	European Troops	922	3	...	7	19	29	1	1	...	1	1	3	...	65	32
	Native "	6,123*	...	43	26	45	6	17	26	2	3	1	6	1	176	111
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22
1842	European Troops	938	...	1	...	13	2	5	7	...	3	...	5	2	38	19
	Native "	5,280*	1	1	14	16	14	21	5	3	3	...	2	1	81	43
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29
1843	European Troops	895	...	...	3	...	1	...	7	3	...	2	1	1	18	9
	Native "	5,898*	...	2	2	...	1	2	12	2	1	2	4	...	28	16
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35
1844	European Troops	904	...	...	...	...	2	1	2	1	1	1	...	...	8	3
	Native "	6,313*	5	...	5	5	9	4	1	6	3	1	7	1	47	17
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32
1845	European Troops	1,107	...	...	...	18	12	...	3	5	...	2	...	...	40	24
	Native "	2,362	...	...	12	10	7	24	7	12	8	2	4	1	87	27
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63
1846	European Troops	712	...	...	1	...	2	...	...	...	...	2	...	...	5	1
	Native "	6,277*	4	2	3	7	8	38	8	5	3	3	2	...	83	14
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
1847	European Troops	974	4	1	...	5	105	...	2	1	...	...	...	...	118	44
	Native "	5,596*	...	...	...	10	23	4	8	18	14	3	10	2	92	27
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22
1848	European Troops	1,063	...	...	...	1	13	9	1	1	...	1	...	...	26	4
	Native "	5,106*	...	1	3	25	6	11	15	13	4	1	11	4	94	24
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
1849	European Troops	1,028	...	...	1	2	3	...	...	1	...	...	5	...	12	5
	Native "	5,319*	1	...	2	44	19	2	30	8	4	4	5	1	120	81
1850	European Troops	...	...	...	...	1	...	...	...	...	...	...	...	2	...	3
1851	European Troops	...	...	3	2	...	1	2	12	...	...	...	...	...	...	20
	Native "	5,656*	...	1	...	7	10	...	8	2	2	...	...	...	30	8
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	27
1852	European Troops	...	...	...	...	...	2	...	...	...	...	...	...	1	...	3
	Native "	5,173*	...	2	...	...	3	5	1	1	...	...	...	...	12	3
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1853	European Troops	993	...	...	...	...	10	8	7	...	...	...	...	...	...	25
	Native "	2,134	...	...	5	5	16	3	16	...	...	...	...	...	45	9
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1854	Native Troops	...	...	...	9	10	18	1	1	...	...	...	...	...	39	15
	Prisoners	659	1	2	3	1	...	...	1	...	...	...	...	1	9	3
1855	European Troops	...	...	...	...	...	6	...	...	...	...	...	...	...	...	6
	Native "	...	...	...	...	6	50	3	...	...	...	...	...	...	59	14
	Prisoners	595	...	1	11	2	3	3	3	3	...	1	2	...	29	...
1856	European Troops	918	...	...	...	...	...	...	...	...	6	...	...	...	6	3
	Native "	...	...	...	1	1	...	...	...	1	...	4	...	...	7	3
	Prisoners	644	...	1	8	16	1	...	...	1	1	1	2	...	31	5
1857	European Troops	...	...	...	...	2	...	...	...	2	...	...	...	...	...	4
	Prisoners	692	1	...	2	...	2	...	...	25	19	...	...	...	49	20
1858	European Troops	877	...	...	1	3	...	2	...	2	...	...	...	2	10	1
	Prisoners	750	...	...	1	1	...	...	...	...	...	...	...	...	2	...

---

* The strength in the Dinapore Circle.

† In this and other instances the particulars of *cases* are not known.

Notes on outbreaks, Dinapore.

Statement of Cholera at Dinapore, 1826 *to* 1872—concluded.

Years.		Average strength.	Number of cases.												Total cases.	Total deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1859	European Troops -	1,518	1	1	2	1	2	9	3	7	...	...	3	1	30	8
	Native „ -	654	...	...	...	...	...	17	1	...	...	...	...	...	18	8
	Prisoners -	723	...	...	...	...	...	...	1	...	1	18	25	2	47	25
1860	European Troops -	887	...	1	2	8	7	3	...	...	...	2	...	...	23	8
	Native „ -	873	1	...	...	6	5	1	1	...	1	1	...	...	16	7
	Prisoners -	456	...	...	...	...	2	1	12	21	1	1	...	...	38	14
1861	European Troops -	783	...	...	...	2	...	...	...	...	...	...	...	1	3	2
	Native „ -	532	...	...	...	1	1	...	1	...	...	...	...	...	3	1
	Prisoners -	394	...	...	...	...	...	2	31	...	...	...	...	...	33	14
1862	European Troops -	655	1	...	...	...	1	...	...	...	...	...	2	...	4	...
	Native „ -	418	...	...	...	...	1	1	...	...	2	2	3	...	9	2
	Prisoners -	398	...	...	...	...	...	...	...	10	...	...	...	...	10	3
1863	European Troops -	925	...	...	1	1	...	1	1	...	...	...	...	...	4	3
	Native „ -	670	...	...	1	2	1	2	1	1	...	1	...	...	9	1
	Prisoners -	436	...	...	22	...	...	...	31	18	...	...	...	...	71	19
1864	European Troops -	968	...	...	...	1	...	...	5	1	...	1	...	...	8	5
	Native „ -	587	...	...	...	...	...	...	1	4	...	...	...	...	5	1
	Prisoners -	467	...	...	2	24	1	...	...	1	...	...	...	...	28	8
1865	European Troops -	1,062	...	...	...	...	...	...	...	...	...	...	1	2	3	1
	Prisoners -	433	...	...	1	32	...	...	...	...	...	...	...	...	33	14
1866	European Troops -	892	...	...	...	...	...	...	...	1	...	...	...	...	1	...
	Native „ -	...	...	...	...	...	...	...	...	1	1	...	...	...	2	1
	Prisoners -	571	...	...	13	4	...	...	...	22	8	...	...	...	47	18
1867	European Troops -	907	...	...	...	...	1	...	...	...	...	...	...	...	1	1
	Native „ -	639	...	...	...	...	...	...	2	4	1	2	...	...	9	6
	Prisoners -	533	...	...	...	13	1	...	...	...	1	7	21	...	43	25
1868	European Troops -	854	...	...	...	...	...	1	...	...	1	...	...	...	2	1
	Native „ -	660	...	...	...	...	...	...	1	...	...	...	...	...	1	1
	Prisoners -	399	...	...	...	1	4	1	1	4	...	2	1	1	15	6
1869	European Troops -	1,065	...	...	...	...	...	1	1	1	...	...	...	1	4	1
	Native „ -	532	...	6	3	1	3	...	...	2	...	...	...	...	15	5
	Prisoners -	438	...	...	2	14	...	...	...	...	18	4	20	...	58	15
1870	European Troops -	1,117	...	...	...	...	2	1	2	1	...	3	...	...	9	7
	Prisoners -	454	1	1	1	2	...	...	2	12	...	...	...	...	19	8
1871	European Troops -	1,181	...	...	...	...	...	...	...	...	...	...	6	2	8	6
	Prisoners -	455	...	...	1	1	1	...	...	...	...	...	15	...	18	4
1872	European Troops -	1,114	...	...	...	...	...	...	1	...	...	...	...	1	2	2
	Native „ -	603	...	...	...	...	1	...	...	...	1	...	...	...	2	2
	Prisoners -	411	...	...	1	...	...	...	...	1	...	...	...	...	2	...

Benares.—The district covers an area of 995 square miles, and has a population of 793,433. The city, situated on the left bank of the Ganges, has nearly 200,000 inhabitants; elevation above the sea 255 feet. Cholera is rarely absent from this part of the country. Cases occur nearly every month of each year. In the early part of 1872 the disease was chiefly prevalent in the part adjoining Jounpore; afterwards it was widely spread, but was nowhere very severe. As a whole, it may be said that the disease gradually attained its height in April and May, and then gradually declined. The cantonment and civil station lie about three miles from the city. The garrison consisted of D Battery, 8th Brigade, Royal Artillery; Left Wing, 1st Battalion, 3rd Foot; Detachment 4th Cavalry; and the 5th Native Infantry.

No. 2, Benares Cantonment.

II. Details of the outbreak.—In the cantonment the native troops altogether escaped. In the *Artillery, (Assistant Surgeon W. F. Stevenson, M. B.,)* there were four cases, two among the men and two among the women, and three deaths. The first occurred on the 8th April, and the second on the 9th. The two others were on the 9th July. Diarrhœa was not prevalent. In the *Buffs, (Assistant Surgeon J. Ferguson,)* the only case was on the 11th April. Cases of diarrhœa were common. In the bazaars, embracing a population of 5,458, two deaths from cholera were reported in May and two in June. Among the Native troops *(Surgeon Major R. H. Perkins and Surgeon A. Verchere)* no cases occurred till December, when a sepoy was attacked. One of the camp followers, a woman, was attacked on the 26th March, and a child on the 6th June. In the *Central Prison, (Surgeon W. R. Hooper,)* containing 1,295 convicts with 169 men of a guard, the first case appeared in hospital on the 24th July. The man had been under treatment for some time. All the patients were at once removed to a barrack in one of the blocks and kept separate. Next day, the 25th, a second case followed among them, and on the 26th a third. The party was then removed to a temporary shed in the outskirts of the jail. On the 29th a fourth case

No. 3, Benares Central Prison.

occurred, and on the 30th there were two more. Of the six attacked, five died. All the other prisoners escaped. On the 21st August, a European warder was attacked in the subordinates' quarters, and on the 23rd, a child in another room of the same building. No prevalence of diarrhœa. In the *Asylum* for the *blind* and *destitute* there were 107 inmates, besides the staff of the institution. The first case occurred on the 19th July, the second on the 20th, and the last on the 3rd August. Altogether there were nine, but with these may be taken three, which occurred in the small dispensary which is within the enclosure. The eight buildings attacked were all at this end of the open space over which the cottages are scattered; twenty-five of the cottages escaped. Diarrhœa prevalent. In the *Lunatic Asylum*, with 94 male and 32 female patients, there were fifteen cases, and seven deaths. The first occurred on the 28th July, four followed by the 1st August. By the 9th the disease had ceased. All the buildings afforded cases. Diarrhœa not prevalent among the men; there were a few cases among the women. In the *District Jail* there were 554 prisoners, three were attacked, and one died. The cases occurred on the 5th, 16th, and 28th August. Two buildings were attacked. On the 31st two women, belonging to the family of the Darogah, and residing in his quarters at the jail gate, were attacked.

Notes on outbreaks, No. 4, Benares Blind Asylum.

No. 5, Benares Lunatic Asylum.

No. 6, Benares District Jail.

III. Importation and communication.—Neither Assistant Surgeon Stevenson of the Artillery, nor Assistant Surgeon Ferguson of the Buffs, could trace importation or find any evidence of contagion. None of the attendants on the sick were attacked. Dr. Perkins mentions that the female follower "lived entirely at home and did not visit the bazaar, or city, or neighbouring villages." As regards the civil institutions also, Surgeon Hooper had been unable to discover any importation in any one of those attacked. In the Destitute Asylum a hospital apprentice was seized, and also a member of the family of the hospital compounder. They lived in the affected quarter of the enclosure already referred to. In the *Lunatic Asylum*, of seven attendants on the sick, one was attacked. In the Jail the attendants altogether escaped. In the Central Prison, it is said that one of the police guard lost his wife from cholera on the 18th July, seven days before the first case among the prisoners. He came after this to the jail only once. A servant of his also came once. The police guard are quartered within a few yards of the hospital. None of the guard were seized. In connection with this, it may be mentioned that between the 4th and 7th June four deaths occurred in the Stone Bridge Bazaar. On the 6th, 7th, and 8th there were three cases among Europeans residing in houses on the opposite bank of the river Burna, within a length of half a mile from one another. In regard to the lady attacked on the 8th, it is known that the washerman of the family lost his father from cholera the day previous. When this lady had been ill for some twelve hours her children were removed to the Civil Surgeon's house, and one of them was attacked soon after. Neither the Civil Surgeon nor his family, numbering five, suffered.

V. Local conditions.—The *drainage* is reported to be fairly good as a whole; but there is evidence that it is far from perfect in many parts of the station. There are no pumps in the cantonment; the *water* is drawn from wells. No connection could be traced between cases of cholera, and the water from any particular well. The hut in which the female follower was attacked was "overcrowded, badly situated and ventilated. The other case occurred in a hut of which the sanitary conditions were equally bad." In the Blind Asylum all drank from one well, and no filters were used. In the District Jail several wells are in use. The three prisoners attacked drank from three different wells. In the Central Prison the whole of the left circle, including 657 prisoners, were using the same well as that which supplied the hospital. It was supposed at one time that possibly the hospital filters had been contaminated by the policeman or his servant, whose visits to the jail have been already mentioned, but of this there is no evidence whatever. The hospital is situated about 500 yards from the Burna, on the same bank, and about half a mile from the houses of the civil residents attacked. As soon as the first case of cholera appeared among the prisoners the filters were destroyed. When it occurred, three filters were in use, and they were employed indiscriminately to supply the sick. There was no *overcrowding*, except in the District Jail and in the Lunatic Asylum, but it was not great, and in the latter it did not exist to the same extent as usual.

VI. Preventive measures.—In the cantonment, the barrack or room was vacated immediately a case occurred in it. No second case followed. The movement in the Central Prison and the subsequent history of the disease have been already described. In the case of the child attacked in the warders' barrack, the room was not vacated, and no other case followed among the occupants. In the Blind Asylum rooms, in which a case occurred, were at once vacated, and if a second case appeared in the same buildings the whole was abandoned. The inmates were distributed among the other buildings, and no further attacks took place among them. On the 8th August the lunatics were moved to Pandeypore vacant barracks. Only one case followed, and that was next day. In the District Jail the immediate vacation of a building on the occurrence of the first case was adopted, and no further seizures occurred among those removed.

VII. Previous history.—Cholera has been a frequent visitor at Benares, but of late years the outbreaks among the troops and prisoners, in proportion to strength, have been less severe than they were formerly.

Notes on outbreaks, Benares.

Statement of Cholera at Benares, 1826 *to* 1872.

Years.		Average strength.	Number of cases.												Total cases.	Total deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1826	European Troops	92		...	...	...	...	...	...	...	...	...	1	...	1	...
	Native „	8,518*	...	...	4	27	18	9	3	...	1	...	4	4	70	24
1827	European Troops	87	..	...	...	...	1	...	1	...	...	...	...	...	2	1
	Native „	7,434*	1	1	.	2	1	2	1	13	...	2	...	...	23	4
1828	European Troops	80	...	...	...	...	..	1	1	1	...	...	...	...	3	...
	Native „	7,797*	...	...	2	4	6	1	9	9	...	...	...	...	31	7
1829	European Troops	130	...	...	...	...	...	...	...	...	...	...	2	...	2	1
	Native „	...	...	...	...	1	2	2	1	4	...	...	...	1	11	5
1830	Native Troops	5,176*	...	3	1	4	1	...	...	2	...	...	...	1	12	2
1831	European Troops	126	...	...	...	...	...	1	...	...	...	1	1	...	3	1
	Native „	4,965*	...	...	1	1	...	5	4	5	1	1	...		18	5
1832	European Troops	95	...	...	1	...	...	...	...	...	...	...	...	...	1	...
	Native „	4,517*	...	...	...	1	5	2	...	...	...	1	...	...	9	1
1833	European Troops	140	..	...	...	1	...	...		...	1	...	...	...	2	...
	Native „	4,004*	...	...		...	1	4	3	2	...	...	...	...	10	4
	Prisoners	...	...	...	...	...	...	...	...		...	...	...	...	...	2
1834	European Troops	101	1	...	...	...	...	.	...	1	...	...	.	...	2	...
	Native „	4,546*	...	...	4	...	1	...	...	...	...	...	...	...	5	2
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	.	...	...	2
183[illegible]	European Troops	98	...	...	..	...	...	...	...	3	1	...	1	...	5	5
	Native „	4,978*	14	5	...	...	3	2	...	4	3	...	...	...	31	16
	Prisoners	...	.	...	...	...	...	...	...	...	...	...	...	...	...	4
1836	European Troops	104	...	...	...	...	...	...	...	...	...	1	...	...	1	...
	Native „	3,930*	1	...	1	1	...	2	...	...	2	1	1	1	10	5
	Prisoners	...	...	...	...	...	...	...	...	.	...	...	.	...	...	17
1837	European Troops	97	1	...	...	...	...	...	...	...	...	1	...	...	2	1
	Native „	3,574*	.	...	1	18	3	1	3	5	1	7	2	...	41	21
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
1838	Native Troops	4,106*	2	...	5	5	4	1	...	...	...	...	...	20	37	11
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	..	...	3
1839	European Troops	90	...	...	...	...	...	...	...	...	...	1	...	...	1	..
	Native „	5,160*	...	...	4	2	3	2	4	1	3	5	1	1	26	15
	Prisoners	...	...	...	..	...	...	...	...	...	...	...	...	...	...	6
1840	European Troops	85	...	...	...	...	...	...	...	4	2	...	...	...	6	3
	Native „	7,563*	2	...	5	5	6	3	1	1	2	1	1	...	27	11
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1841	European Troops	95	...	...	...	...	...	...	1	...	...	...	...	...	1	1
	Native „	5,679*	...	2	...	3	1	5	6	5	1	2	...	...	25	12
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
1842	Native Troops	7,346*	...	2	1	36	9	5	...	2	3	...	...	...	58	31
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1843	Native Troops	7,512*	...	...	1	2	1	...	...	...	...	...	1	5	10	4
1844	Native „	6,303*	1	...	13	3	4	3	1	...	1	1	1	1	29	5
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
1845	European Troops	140	...	...	...	...	...	...	...	...	...	1	...	...	1	...
	Native „	1,695	...	1	21	2	4	7	...	...	1	...	...	1	37	20
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1846	European Troops	130	...	...	...	...	...	...	...	1	...	...	...	...	1	1
	Native „	6,302*	...	2	..	1	...	...	...	...	...	...	...	...	3	...
	Prisoners	...	..	...	...	...	...	...	...	...	...	...	...	...	...	7
1847	European Troops	107	...	...	..	...	...	...	2	3	...	...	...	...	5	3
	Native „	4,804*	...	.	3	12	10	...	2	2	1	...	1	1	32	9
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
1848	European Troops	159	...	...	...	1	...	...	...	...	...	...	...	...	1	1
	Native „	5,346*	...	...	...	...	4	3	5	1	1	...	2	1	17	4

* The strength in the Benares Circle.

Notes on outbreaks, Benares.

Statement of Cholera at Benares, 1826 *to* 1872—continued.

Years.		Average strength.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total cases.	Total deaths.
			Number of cases.													
1849	European Troops	161	...	...	...	..	...	...	...	1	2	...	1	...	4	2
	Native „	5,405*	...	...	...	...	...	...	...	1	3	1	2	...	7	1
	Prisoners	...	...	...	..	...	...	..	...	...	...	...	...	...	...	5
1850†		...	...	...	...	.	...	...	...	...	...	...	...	...	...	...
1851	European Troops	...	...	...	3	...	...	...	...	...	...	...	...	...	...	3‡
	Native „	2,968	1	2	...	1	2	4	...	2	1	1	..	...	14	6
1852	European Troops	...	...	...	...	...	...	..	...	...	2	...	...	...	...	2‡
	Native „	10,503*	...	1	2	27	3	3	1	3	...	...	...	...	40	4
1853	European Troops	78	...	...	...	...	...	...	3	1	..	...	...	...	...	4‡
	Native „	2,847	...	...	2	4	8	19	...	8	...	1	...	...	42	13
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	..	...	...	19
1854	European Troops	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1‡
	Native „	...	1	...	1	6	42	...	1	1	...	...	...	...	52	27
	Prisoners	1,234	...	...	...	3	5	1	...	...	...	...	...	...	9	2
1855	Native Troops	...	...	...	2	2	4	6	...	...	...	...	...	..	14	5
	Prisoners	1,316	...	...	...	...	6	23	8	57	19	1	...	...	114	54
1856	Native Troops	3,173	...	...	...	11	5	...	4	1	...	...	...	...	21	11
	Prisoners	1,003	...	...	4	4	10	1	...	...	...	...	...	...	19	7
1857	European Troops	Depôt	...	...	...	...	...	4	1	26	...	4	3	2	...	40‡
	Prisoners	950	...	...	...	2	1	1	10	80	13	12	1	...	120	58
1858	European Troops	511	1	...	7	1	8	5	4	...	...	...	...	...	21	7
	Prisoners	1,447	...	...	...	1	...	...	...	...	...	...	...	...	1	...
1859	European Troops	1,315	...	...	...	1	3	11	9	18	1	2	1	...	46	26
	Prisoners	1,104	...	...	...	5	2	1	...	...	...	...	...	...	8	3
1860	European Troops	1,447	...	2	28	6	1	1	7	...	...	1	1	...	47	33
	Native „	1,250	...	5	10	3	16	13	...	...	...	...	...	...	47	24
	Prisoners	1,176	...	...	2	1	...	...	...	40	3	...	...	...	46	19
1861	European Troops	737	...	...	...	...	...	...	...	1	...	...	...	...	1	1
	Native „	686	...	...	1	...	3	1	6	1	...	...	...	...	12	9
	Prisoners	1,397	...	...	...	...	1	...	1	...	...	...	...	...	2	...
1862	European Troops	1,142	...	...	..	...	...	1	...	...	...	...	...	...	1	...
	Prisoners	1,718	...	...	...	...	...	1	...	...	...	...	...	...	1	1
1863	European Troops	1,210	1	...	1	12	...	...	26	2	2	...	...	...	44	35
	Native „	563	...	...	...	1	1	1	1	3	...	1	...	...	8	5
	Prisoners	1,412	...	...	1	...	...	31	38	1	...	...	...	...	71	44
1864	European Troops	1,081	...	...	...	...	1	1	4	1	...	...	...	...	7	6
	Native „	551	...	...	...	1	1	1	...	...	...	...	...	...	3	2
	Prisoners	1,306	...	...	2	1	...	...	2	44	...	...	...	...	49	26
1865	European Troops	998	4	...		7	...	..	...	...	...	...	...	...	11	9
	Native „	595	...	...	...	...	2	...	...	...	1	1	...	...	4	2
	Prisoners	1,198	...	...	...	...	...	...	...	...	2	...		...	2	1
1866	European Troops	645	...	...	...	...	...	...	3	6	...	1	...	...	10	6
	Native „	...		...	...	3	4	...	...	1	...	...	...	...	8	5
1867	Native Troops	541	...	...	2	...	1	...	...	...	...	..	...	...	3	2
1868	European Troops	663	...	...	...	...	...	...	...	1	1	...	...	...	2	1
	Native „	563	...	...	...	...	1	...	...	...	...	...	...	...	1	1
	Prisoners	1,400	...	...	...	...	1	...	...	...	...	...	1	...	2	1
1869	European Troops	906	...	...	...	...	...	...	1	2	...	...	...	...	3	2
	Native „	569	...	...	1	...	1	...	...	...	...	...	...	...	2	1
	Prisoners	1.701	...	...	...	...	...	...	...	2	...	...	...	...	2	2
1870	Native Troops	562	...	...	...	...	...	...	...	1	...	...	...	...	1	1
1871	European Troops	689	...	...	...	...	...	...	1	1	1	...	...	...	3	3
	Native „	551	...	...	...	1	...	...	...	...	...	...	...	...	1	1
1872	European Troops	655	...	...	...	3	...	...	1	...	...	...	...	...	4	3
	Native „	550	...	...	...	...	...	...	...	...	...	...	...	1	1	1
	Prisoners	1,797	...	...	...	...	...	...	6	3	...	...	...	...	9	6

* The strength of the Benares Circle. † Not given. ‡ Deaths only recorded.

Fyzabad.

FYZABAD.—The town lies on the right bank of the Gogra, 78 miles east from Lucknow, and has a population of 37,800. Three miles distant is Ajoodhia, the old city, which has 10,000 inhabitants and is a favorite place of pilgrimage. The district contains 1,025,718 inhabitants, and covers an area of 2,332 square miles. The cantonment and civil station lie side by side a mile from the city, at an elevation of 408 feet. The garrison consisted of E Battery, 16th Brigade, Royal Artillery; 26th Cameronians; Detachment 7th Cavalry; and 38th Regiment Native Infantry.

Notes on outbreaks, No. 7, 26th Cameronians.

II. Details of the outbreak.—In the district cholera has for some years been almost constantly present. Very few deaths from it occurred in the first quarter of 1872. In April there were 197, and in May 397. The disease then gradually declined till November, when there was a slight increase; in December it had almost disappeared. The total mortality, according to the register, was 849. Among the Europeans in cantonments, the *26th Regiment* (*Surgeon F. M. Sukes*) was first attacked. They landed in India in July 1868, and arrived at Fyzabad in January 1870. Their health was at the time generally good, but there were a number of anæmic men amongst them. These, however, did not suffer from cholera more than those who were strong and well. On the 18th August the first case occurred; the man had run a race the day previous, and had then taken a cold bath. Three more cases followed on the 23rd, and three more on the 24th. Dropping cases continued here and there till the 9th September, on which day there were five, and on the 10th there were twelve. The last case occurred on the 24th, after a clear interval of ten days. Altogether there were among—

	Strength.	Admissions.	Deaths.
Officers	18	...	...
Men	835	27	15
Women	74	7	5
Children	129	16	11
		50	31

Diarrhœa and fevers were not prevalent. Of these 50 cases, 48 occurred in cantonment, and only two in camp. Of the 48, 39 were attacked in barracks, and nine in tents pitched either near the orderly-room or on the parade ground. Of the 35 buildings occupied by the regiment, 15 escaped.

III. Importation and communication.—Before the first case occurred among the men, so far as is known, there had been no cases in the bazaar, nor had any of the regimental servants been attacked. Within cantonments no native suffered throughout the whole season, except two, one on the 30th August and the other on the 31st. The first was the child of a sweeper belonging to the regimental hospital,—*not* the hospital where cholera cases were treated,—and the other a servant in the officers' lines. There was no evidence of importation. During the course of the disease in the regiment, there was no evidence of its being spread by contagion. A woman was attacked within 24 hours of attending her child, who was ill of cholera; both came from the same quarters three days previously. An orderly, whose duty it was to see that the cots and bedding of men attacked with cholera were disinfected or destroyed, was himself seized; his work brought him much about the infected barracks. The disease was widely scattered over the lines, and showed itself here and there at widely distant points. Of the 40 natives who attended the cholera cases, not one was attacked.

V. Local conditions.—*Drainage* is tolerably good. *Water* for drinking is drawn from four wells; one for all the single men is covered, and has a chain-pump. At the hospital there is another similarly fitted. The married people draw from two uncovered wells. From all of them the water is distributed in *mussucks*. No community drawing from any one of these wells suffered in any exceptional degree. There was no *overcrowding*.

VI. Preventive measures; quarantine.—In the early part of the season, when cholera was prevalent in the district, a cordon was drawn round the station, and this is believed to have protected it from the disease. *Movement.*—In the single men's barrack, as soon as a case occurred, the building was at once vacated. In the family barracks, the affected quarter was similarly dealt with. The inmates were placed in tents, except in two instances, in which they were transferred to a barrack where persons had been seized before, but which had since been vacant for ten days, and had, meantime, been whitewashed and disinfected. Movement into tents was adopted altogether in 26 different parties of single men or families. In 18 of them no further case occurred among the persons so removed. In eight of them, cases occurred after leaving the building, at periods varying from two to eleven days. In both instances in which buildings which had been fumigated were re-occupied by persons from an affected building, a fresh case appeared, and they were immediately abandoned. On the 3rd September a detachment from the tents on the parade ground was sent three miles off, to camp at Mhow. No cases occurred after departure from cantonments. They returned on 2nd October. On the 10th September another detachment from infected buildings moved to camp Hurreepore, five miles distant on the Lucknow road; two cases occurred among them, one on the 13th and the other on the 19th; two other camps were formed, one at Durabgunge, three miles on the Lucknow road, and the other at Salaspore, six miles in the same direction. Both these were occupied by detachments from unaffected buildings, and they had no cases. A more general movement would have been made much earlier, had tents and carriage been procurable. The health of those in camp did not suffer in the least.

Notes on outbreaks, Fyzabad, No. 8, Royal Artillery.

The *Battery, Royal Artillery* (*Assistant Surgeon F. Falwasser*) had been quartered at Fyzabad for 18 months, and the health of the men had been very good. The first case did not appear till the 30th August, when two men were attacked, one in the guard room and one in No. 2 barrack. The third case did not occur till the 9th September. The last was on the 24th. Altogether there were 10 seizures, all among the single men.

	Strength.	Admissions.	Deaths.
Officers	4	...	...
Men	127	10	6
Women	9	...	...
Children	15	...	...
		10	6

After the third case there was much diarrhœa, but it was easily checked. Two of the buildings were attacked; four escaped.

The daily number of cases among the troops was as follows :—

	R. A.	26th Regt.	Bazaar.		R. A.	26th Regt.	Bazaar.
August 18th ...	...	1	...	Brought forward ...	2	16	2
" 19th ...	...	...	...				
" 20th ...	...	...	...	September 7th ...	...	4	
" 21st ...	...	...	...	" 8th ...	...	3	
" 22nd ...	...	...	...	" 9th ...	1	5	
" 23rd ...	...	3	...	" 10th ...	1	12	
" 24th ...	..	3	...	" 11th ...	2	3	
" 25th ...	...	...	...	" 12th ...	1	...	
" 26th ...	...	...	...	" 13th ...	2	4	
" 27th ...	...	...	...	" 14th ...	...	...	
" 28th ...	...	...	...	" 15th ...	...	...	
" 29th ...	...	1	...	" 16th ...	...	...	
" 30th ...	2	2	1	" 17th ...	...	1	
" 31st ...	...	1	1	" 18th ...	...	1	
September 1st ...	...	1	...	" 19th ...	...	1	
" 2nd ...	...	1	...	" 20th ...	...	...	
" 3rd ...	...	1	...	" 21st ...	...	...	
" 4th ...	...	...	...	" 22nd ...	...	...	
" 5th ...	...	...	...	" 23rd ...	...	...	
" 6th ...	...	2	..	" 24th ...	1	...	
Carried over ...	2	16	2	TOTAL ...	10	50	2

In the artillery all but three cases occurred in the left sub-division of the battery.

III. Importation and communication.—No cases had occurred in the bazaar, nor among the other natives belonging to the battery. There was no reason to suspect importation, nor was there any evidence leading to the conclusion that the disease spread by contagion, beyond the fact that the child of a sweeper employed in the cholera hospital was attacked. This case has been already mentioned, and in regard to it Surgeon Skues remarks :—" The mehter was *not* one of those employed near cholera patients, and no trace as to the origin of the disease could be discovered."

IV. Meteorology.—Dr. Falwasser mentions that he "noticed a peculiar atmospheric condition on two days when the disease in both the Royal Artillery and 26th Regiment was very virulent, *viz.*, that the temperature was lower than usual, the air remarkably still; in fact, for the greater part of the day, not a breath of air, and a peculiar bluish mist which had the effect of rendering the day darker than usual, although there were few clouds about."

V. Local conditions. Drainage.—Indifferent, and might easily be improved. *Water* drawn from two covered wells worked by means of an iron bucket and winch—one belongs to the hospital. From the other all the men, married and single, and families were supplied. *All used the same water.* A Californian pump had been attached to hospital well, but it was taken away, as it was always getting out of order. There was no *overcrowding.*

VI. Preventive measures; movement.—On the occurrence of a case the building was at once vacated. In the case of the guard room no further seizures took place; when the case occurred in No. 2 barrack on the 30th August, the building was vacated the same day, and the occupants of the left sub-division placed in tents 50 yards in front of it. For nine days all was well, but on the 9th September there was one case, and another on the 10th; on that date the tents were shifted about 300 yards distance. Two seizures followed on the 11th; that evening they marched to Deeba Seemur, five miles distant. Here three cases occurred, one on the 12th and another on the 13th. The man attacked in the guard was a prisoner who had come two days previous from No. 1, and this building was accordingly vacated on the 12th, and this right sub-division of the battery moved out to camp at Deeba Seemur, five miles off. On the 13th a case occurred, in consequence of which it moved to Mussooree, one mile further on. On the 24th there was another, they therefore changed ground to Purwa, another mile distant. No more cases occurred. The men returned on the 4th, much improved in health from their stay in camp. Among the women and children there were no cases, and they therefore never left their quarters.

Notes on outbreaks, Fyzabad, No. 9, Jail.

Native Troops—No cases.

Fyzabad Jail.—(Surgeon John Cameron, M. D.) When cholera appeared, it contained 1,213 prisoners, and had attached to it an establishment of 94 persons.

II. Details of the outbreak.—The first case occurred on the 19th October, nearly a month after the disease had ceased among the troops. The second was on the 22nd, others continued, but in no great numbers, till the 28th, on which day there were 18; 12 on the 29th, and 15 on the 30th. It then declined, and the outbreak may be said to have ceased on the 3rd November. Three isolated cases, however, followed on the 19th, 22nd and 24th of that month. In all there were 67 cases, and 20 deaths. The general health of the prisoners had been below par, and dysentery had been prevalent in September. Food was dear, and many came into jail sick and weakly. These, however, did not specially suffer from cholera. The cases were thus divided according to sex—

	Strength.	Admissions.	Deaths.
Men	1,106	57	16
Women	107	10	4
Total ...	1,213	67	20

Diarrhœa was not prevalent, either before or during the outbreak. Of 15 buildings, 13 furnished cases, and only 2 escaped. Of the 67 cases, 20 occurred in camp and buildings to which the prisoners were ultimately removed.

III. Importation and communication.—On the 19th, the very day on which the first case appeared, a coolie at the railway station on the one side of the prison, and a woman in the bazaar on the other, were attacked. In this bazaar it is believed that cases had been occurring for some days previous, but the information is inexact. Some of the guard live in this bazaar, and are constantly going to and fro, but none of them suffered. Importation could not be traced, nor, in the course of the outbreak, could any extension of the disease be ascribed to contagion. Of eight attendants in constant waiting on the sick, two were attacked.

V. Local conditions.—The *drainage* is good as a whole, but much needs improvement at the south-east corner. When cholera appeared among the prisoners, the rains had ceased for a month. The water for drinking is drawn from many wells, but there is no evidence to show that a body of prisoners, using any one well, suffered more than those drawing from another. There is some difficulty in ascertaining exactly whence the supply for each barrack was really taken. It is probable that the prisoners during their day's work in different parts of the jail drew water from more than one of them, but barracks Nos. 3 and 4 seem, without doubt, to have been supplied from a well divided between them. In the first there were five cases of cholera; in the second only one. *Overcrowding.*—The jail was much overcrowded, but not more so than most of the jails in Oudh. Each man had considerably under the prescribed 36 superficial feet, and three rows of prisoners in many of them slept between opposite doors. In the barrack where persons under trial are detained, and where there is room for only 34 persons, 74 were placed. No case of cholera occurred among them. They were in only for a few days, and did not suffer; besides they had wheaten-bread, whereas the others had a very inferior diet. *Food.*—On the 10th October the wheaten flour, which had been in use for some months previous, was discontinued, and the prisoners were then fed on gram and rice, half-and-half, ground and made into cakes, and this was varied occasionally with boiled rice of the Boojer variety—an inferior quality. The prisoners were of opinion that the disease was due to the rice.

VI. Preventive measures; quarantine.—New prisoners are kept in a separate ward. There is no real quarantine. *Movement.*—On the 26th October the inmates of barracks Nos. 1, 3 and 10 were sent into camp at Deokah, three miles on the Tanda road. There had by that time been two cases in No. 1, four in No. 3, and three in No. 10. Among these prisoners, numbering 270, 14 cases followed on the 28th, 29th and 30th. On the 29th October the inmates of Nos. 7 and 9, and a portion of the inmates of Nos. 2, 4 and 8, in all 300, were sent to a native building, called the Goolabari, in the outskirts of the city. Four days before the move to the Goolabari, the superintendent of the prison, when inspecting it with a view to use it as a place of refuge for the prisoners, found a man in it suffering from cholera, and he is said to have been attacked while living in the place. But for this, an earlier move would have been made from the jail. Before removal, there had been five cases in No. 2, one in No. 4, eight in No. 7, two in No. 8, and two in No. 9; four cases followed on the 30th, and there were no more afterwards. The male prisoners remaining in the jail after these parties went out, were spread over all the barracks, excepting Nos. 7 and 9, no matter whether there had been cases in them or not. Six cases followed in five of the barracks, all on the next day, the 30th October, and then the disease ceased till the three cases already mentioned occurred in the end of the month. On the 31st October the women were removed to the Begum's tomb, a building half a mile distant. There had been seven cases among them before they left the jail; two followed, one on the same day, and the other on the 2nd November. After returning to the prison, they had a last case on the 22nd November.

VII. Previous history.—The European troops and prisoners suffered more severely in 1872 than in any previous year.

Notes on outbreaks, Fyzabad.

Statement of Cholera at Fyzabad, 1859 *to* 1872.

Years.		Average strength.	Number of cases. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total cases.	Total deaths.
1859	European Troops	1,342	...	...	...	...	...	...	3	...	1	...	...	...	4	3
	Native ,,	1,233	...	...	...	...	...	...	1	...	1	...	...	...	2	1
	Prisoners	142	...	...	...	...	...	...	...	...	...	...	1	...	1	[illegible]
1860	European Troops	1,054	...	...	1	27	...	...	...	...	...	...	1	...	29	20
	Native ,,	527	...	...	2	9	...	...	...	...	...	...	...	...	11	3
	Prisoners	259	1	...	...	4	...	...	...	1	...	...	...	1	7	3
1861	European Troops	1,114	...	...	...	...	...	3	...	...	2	...	...	...	5	1
	Native ,,	423	...	...	...	...	...	...	1	...	...	1	...	...	2	...
1862	Prisoners	766	...	...	1	...	...	...	...	...	...	...	...	...	1	...
1863	Prisoners	891	...	2	...	...	4	...	...	19	...	...	...	...	25	9
1864	European Troops	964	...	...	...	1	...	...	...	...	...	...	...	...	1	1
	Native ,,	679	...	...	...	...	...	2	...	...	...	...	...	...	2	2
	Prisoners	988	...	...	...	56	...	...	...	...	...	...	...	...	56	19
1865	European Troops	953	...	...	...	13	...	...	...	...	...	...	...	...	13	11
	Native ,,	705	...	...	...	...	...	...	...	2	5	...	...	...	7	6
	Prisoners ,,	867	...	...	...	...	1	...	...	...	...	...	...	...	1	1
1867	European Troops	887	...	...	...	2	1	...	...	...	...	...	...	...	3	2
1869	European Troops	1,257	...	...	...	...	...	...	...	24	4	...	...	...	28	20
	Prisoners	1,180	...	...	...	...	...	...	...	3	...	...	...	...	3	1
1870	European Troops	1,022	...	...	...	17	4	1	...	...	...	...	...	...	22	17
	Native ,,	649	...	...	...	2	...	...	...	...	...	...	...	...	2	1
	Prisoners	735	...	1	...	2	...	...	...	...	...	...	...	...	3	...
1872	European Troops	1,193	...	...	...	...	...	...	...	13	49	...	...	...	62	39
	Prisoners	955	...	...	...	...	...	...	...	...	...	62	5	...	67	19

LUCKNOW.—Deputy Inspectors General of Hospitals, British Troops, J. Macbeth, M. D.; C. Archer, M. D., Indian Medical Department.—Altitude 400 feet above the sea, on the banks of the river Goomtee, to the north-east of Cawnpore. The district embraces 1,392 square miles, and contains 789,465 inhabitants. The native city has a population of 2,78,000; close to the city is the Muchee Bhawun Fort, garrisoned by a Battery of Royal Artillery and about 80 sepoys; three miles distant, on somewhat higher ground, is the cantonment. Here the force consisted of A Battery, F Brigade, Royal Horse Artillery; Head Quarters, and C Battery, 8th Brigade, Royal Artillery; 21st Hussars; 1st Battalion 17th Foot; 62nd Foot; and of Native Troops, the 13th Bengal Cavalry and 9th Native Infantry. The non-military native inhabitants of cantonments number over 18,000. In the civil lines there is a considerable European and Eurasian population.

II. Details of the outbreak.—In the end of 1871, as noted in the Sanitary Report for that year, cholera had been prevalent in the city in November and December; 647 deaths had been caused by it, and among the European Troops there had, about the same time, been 31 cases. By the end of the year the disease had disappeared, and was not again heard of till the 2nd April, when a death was reported from it in the north-east corner of the district. In that month it appeared in 13 different villages, chiefly in two police circles far distant from one another, and 49 deaths were registered. The further progress of the disease, so far as the rural population is concerned, is shown in the following statement:—

Month.	Number of villages suffering from cholera.	Number of those attacked for the first time in each month.	Number of deaths reported from cholera.
April	13	13	49
May	61	50	222
June	160	80	421
July	78	39	196
August	62	23	136
September	11	1	21
October	12	8	50
November to 2nd	1	0	4
Total ...	...	...	1,102

In the *city* of LUCKNOW—Surgeon Major H. M. Cannon, M. B., Civil Surgeon; Surgeon E. Bonavia, M. D., Health Officer—the first death was reported on the 15th May. From that date up to the 2nd November, 118 deaths from cholera were registered. The disease was widely spread, as shown by the fact that the deaths during these five months occurred in

Notes on outbreaks, Lucknow.

67 different wards. In many of these there was but one altogether. In the chowk part of the city, which has a population within itself of 63,350, only 29 of the deaths occurred; 16 of the 19 mohullas affected contributed only one each. In only nine instances did more than one death occur in the same house. The disease was thus widely dotted over the city.

No. 10, Fort.

In the *Fort* the first case occurred in an overseer of the Public Works Department on the 10th May, before any case was known in the city. In the Royal Artillery (Staff Assistant Surgeon J. E. Fannin) Battery, which consisted of officers 4, men 88, women 9, and children 24, a child was attacked on the 12th May, and two men were seized in the same room on the nights of the 15th and 16th of the same month. Slight diarrhœa prevailed. Among the sepoys, one was seized on the 15th, and another on the 19th May. After many weeks a third was attacked on the 3rd August. None of the camp-followers or servants within the fort suffered. The cases among the Europeans occurred in three buildings widely apart. The sepoy guard has usually been relieved every Monday, but when cholera appeared, it was not changed for some time.

III. Importation and communication.—There was no ground to attribute the first case in the fort to importation, nor in the course of the outbreak was there any evidence that it spread from the sick to the healthy.

V. Local conditions.—The fort stands high, and the drainage is excellent. On the city side, however, there is a main drain which runs below and carries sewage. The water is drawn from a well outside. When in any room a case occurred it was immediately vacated, and none of the inmates were subsequently attacked.

No. 11, Military Prison.

In the *Military Prison,*—Staff Assistant Surgeon H. Scott—which lies between the fort and the cantonment, there were 42 European prisoners, 5 warders, and a guard of 20 men.

II. Details of the outbreak.—On the 21st August a man in one of the cells was attacked. He had been five weeks in prison. On the 2nd October another prisoner in another cell, in a different part of the prison, was seized. He had come from Cawnpore 16 days previous, and at that time there was no cholera in the Cawnpore cantonment. These were the only two cases; one of them recovered, the other died rapidly.

III. Importation and communication.—There was nothing to indicate that the disease had been introduced from outside, or that it spread by contagion. None of the attendants were attacked. Diarrhœa was prevalent among the prisoners for some weeks, about the time cholera appeared. It was attributed to the pease meal, which was discontinued. None of the guard were attacked.

V. Local conditions.—The water is drawn from a well outside in the usual manner. In the prison-yard is a well fitted with a pump, but the water is slightly brackish, and has not been used by the prisoners for years.

No. 12, Royal Artillery.

THE CANTONMENT. *Details of the outbreak.*—In the *Artillery* lines—Surgeon A. Guthrie, M. D.—the first case occurred in the regimental bazaar on the 19th July, in a child. On the 21st, a man of A Battery, F Brigade, was attacked in No. 4 barrack, a second on the 22nd, and a third on the 30th, all in the same barrack. On the 2nd this barrack was vacated, and the inmates encamped one mile to the north-east, near the Beebeeapore house. In No. 6 barrack 2 cases occurred, one on the 30th July, and one on the 4th August. On the 5th the inmates went out and joined the camp. On the 7th the inmates of No. 5 barrack also went out. During the eight days the camp remained near Beebeeapore, there were five seizures, one on the 7th, from the men of barrack No. 5; *one on the 8th; one on the 9th, from the men of Nos. 4 and 2; and 2 on the 9th, from the men of No. 6. On the evening of the 9th they moved to Sheikpoora, and after that two more cases occurred, one on the 12th, and another on the 14th, both from among the men who had occupied No. 6 barrack. On the 26th August they returned to cantonments, and had no further attacks. Diarrhœa was prevalent before moving out, and also in the first camp. In addition to the above, a few other cases occurred in cantonments, one of which was in hospital. The last case of all happened on the 16th August; five different buildings suffered in all. The total admissions and deaths in the battery were as follows:—

	Strength.	Admissions.	Deaths.
Officers	5	...	...
Men	143	12	6
Women	17	2	1
Children	37	2	1
		16	8

Five cases occurred among the followers while the Europeans were suffering.

---

* The very day they left the barrack.

Notes on outbreaks, Lucknow.

In C Battery and the Head Quarters of the 8th Brigade there were altogether five cases and three deaths.

C, 8th R. A.	Strength.	Admissions.	Deaths.
Officers	4	...	...
Men	115	2	...
Women	16	2	2
Children	42	...	...
		4	2

In the Head Quarters, 8th Brigade—

	Strength.	Admissions.	Deaths.
Officers	7	...	...
Men	7	...	...
Women	5	1	1
Children	6	...	...
		1	1

The first occurred in hospital on the 6th August, and the last on the 12th. They occurred in four different buildings. Before the outbreak there was no prevalence of diarrhœa or fever. Diarrhœa became prevalent when cholera appeared.

III. Importation and communication.—There had been cases in other parts of the cantonment long previously, and some grass-cutters of the Artillery were seized shortly before any of the men, but there was no evidence either of importation or of contagion; none of the attendants on the sick were attacked.

IV. Meteorology.—The observations afford no very definite data. There were several heavy falls of rain, but from the 9th to the 28th July there was no rain. The temperature for this time, however, was rather lower than that of the previous year during the same period. Winds variable, but frequently from the east.

V. Local conditions.—*Drainage* of the lines is very good; *water* drawn from three wells is naturally of excellent quality, but fault was found with the filtering arrangements which rendered it impure. No *overcrowding.*

VI. Preventive measures.—*Movement* was not always promptly made when a case occurred. In No. 4 barrack there had been three cases before it was vacated, and eleven days intervened, from the 21st July to the 2nd August. In No. 6 there had been two cases, and six days intervened before evacuation, from the 30th July to the 4th August. In No. 3 family quarters three cases occurred, one on the 11th, one on the 12th, and one on the 16th. On the 18th they went to Beebeeapore and had no more cases. No diseases appeared to be caused by camp.

No. 13, 21st Hussars.

21ST HUSSARS.—Surgeon Major G. A. Turnbull.

II.—Details of the outbreak.

	Strength.	Admissions.	Deaths.
Officers	17	...	...
Men	421	1	1
Women	29	...	...
Children	54	1	1
		2	2

First case, a Troop Sergeant Major, attacked on the 28th August. The second and only other case was a child on the 2nd September; both died. Two buildings were attacked, all the rest escaped. There was no prevalence of diarrhœa.

III. Importation and communication.—There were seven cases among the syces between the 19th August and 4th September, but no communication could be traced None of the attendants were attacked.

V. Local conditions.—The *drainage* of the lines is reported to be good. The *water* was drawn from several wells. The men had abundant space.

VI. Preventive measures.—As soon as a case occurred the room was at once vacated and closed. The men of the troops of which the Sergeant Major was attacked in addition left the building on the following morning.

No. 14, 62nd Foot.

62ND FOOT.—Assistant Surgeon R. J. Scott, M. B.

II. Details of the outbreak.—The first case occurred on the 22nd May. The man recovered. There was no further case till the 17th August, a third occurred on the 31st August, and a fourth on the 8th September. Dropping cases continued to the 27th September, and there was a last attack on the 18th October. Altogether there were among—

	Strength.	Admissions.	Deaths.
Officers	17	...	...
Men	800	4	3
Women	97	6	4
Children	179	4	2
		14	9

Eight different buildings were attacked scattered over the lines. The family barracks suffered most, but in only one of them did more than a single seizure take place in the same quarters. In this instance, a mother and child were attacked within 24 hours of each other. Diarrhœa and fever were not prevalent.

Notes on outbreaks, Lucknow.

III. Importation and communication.—Before the man was seized on the 31st August, so far as is known, none of the bazaar people or servants had suffered from cholera. There was no evidence of importation or contagion. Of 12 native attendants on the sick, all escaped.

V. Local conditions.—*Drainage* very good. *Water* drawn from several wells, and no prevalence attached itself to the use of any particular one. No *overcrowding*.

VI. Preventive measures.—In all cases but one, the affected room was at once vacated, and no further cases occurred among the inmates. In this instance, although not vacated, no further case occurred. The inmates of affected barracks were, as a rule, moved to tents on the side of the lines, and there they remained, each set for ten days, and then returned to quarters. A small party moved to camp at Beebeeapore; no cases followed. There was one case in tents.

No. 15, 1-17th Regiment.

1ST BATTALION, 17TH REGIMENT.—Surgeon W. J. Ingham.

II. Details of the outbreak.—The first seizure occurred on the 29th June. Dropping cases continued till the 17th October; a further case occurred on the 26th November, followed by another on the 28th, and a third on the 29th—

	Strength.	Admissions.	Deaths.
Officers	17	...	...
Men	870	12	10
Women	98	...	...
Children	153	1	...
		13	10

Of these, three were attacked in hospital; ten different buildings afforded cases. The case of the 26th November was in the musketry camp.

III. Importation and communication.—There had been no cases in the lines before the 20th May. No importation or contagion could be traced. No attendant was attacked.

V. Local conditions.—*Drainage* is not very good in these lines. *Water*—two wells are used for drinking. Those using the one suffered as much as those using the other. The men had ample room.

VI. Preventive measures. Movement.—Whenever a case occurred, the room was at once vacated, and the inmates moved into spare quarters. In hospital one case occurred on the 2nd July, and that part of the long ward was at once vacated. On the 5th a second case occurred in another part of the same ward. The inmates were moved to the other wing of the building, and there a third case occurred among them on the 6th. With this exception, the abandonment of an infected room was followed by complete cessation of the cholera among its occupants. There was abundant spare room, so it was not necessary to use tents. If a case occurred in any building, the occupants of the room were moved to a room in another building, which was altogether vacated by transferring its inmates to a spare barrack. For example, if a room in A was affected, B, which was occupied by healthy people, was vacated by their transfer to C. B then became a quarter to which persons from other affected barracks could be sent without alarming the occupants by the idea of contagion. Among the *staff* and non-military European residents of cantonment, the only attack took place on the 22nd August. In the bazaars the first case was on the 20th May; total 26 cases and 8 deaths scattered over the bazaars here and there to the 16th September. Two of the cases were attendants from the cholera hospital. Natives attacked were brought to the hospital from their houses whether they liked it or not, and it is believed that cases were not concealed.

As I have already mentioned, one man of the 1-17th was attacked with cholera in the musketry camp on the 26th November. The same day, after a long interval, there were four cases from different parts of the city, and next day a European in the civil lines was seized. On the night of the 24th, a horse in A Battery, F Brigade died rapidly of purging. On the 25th, 15 more were seized with similar symptoms. Of these, I saw several, and one or two of them presented a most miserable appearance; thin, weak, with staring coats and tucked up abdomens, it was hard to believe that they had been fine, strong, well-conditioned animals only two days previously.

Native Troops.—No report has been received either from the 13th Bengal Cavalry or 9th Native Infantry. Very few cases occurred in them. A return obtained from Dr. Archer, Deputy Inspector General of Hospitals, gives only the deaths; one on the 16th May, one on 3rd July, one on 16th July, one on 4th August, one on 17th August, and one on 1st September. Fevers were very prevalent among the Native Troops.

As nominal rolls of cases from several of the European Corps also are wanting, the daily cases of cholera occurring among them cannot be tabulated and compared.

Lucknow Lunatic Asylum.—Near the civil lines; 130 lunatics. No case of cholera.

Lucknow Central Prison.—Near the cantonment; 1,700 prisoners, with establishment and guards; was overcrowded. No case of cholera.

No. 16, District Jail.

Lucknow District Jail—Surgeon J. C. Whishaw contained 1,100 prisoners.

II. Details of the outbreak.—A mohurrir or native accountant, who lived in the precincts, was attacked on the 1st August and died. On the 11th August two prisoners in barrack No. 8 were seized, and a third, in the barrack for new prisoners, on the 26th.

Notes on outbreaks, Lucknow.

III. Importation and communication.—No importation could be traced, nor does Dr. Whishaw believe there is any evidence of contagion.

V. Local conditions.—The jail was much overcrowded.

VI. Preventive measures.—In both cases the building was vacated within 24 hours, and no fresh cases occurred among the inmates.

VII. Previous history.—Up to 1856 Lucknow was occupied only by Native Troops, and the station was several miles from the site now occupied. Since 1856 cholera has been an annual visitor.

Statement of Cholera at Lucknow, 1856 to 1872.

Years.		Average strength.	Number of cases.												Total cases.	Total deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1856	European Troops	905	...	...	...	...	...	35	31	...	...	...	...	...	66	46
	Native „	10,443*	1	...	6	10	20	5	...	1	1	...	4	...	48	14
1857	European „	...	...	...	...	...	...	14	18	9	4	...	...	...	...	‡45
1858	Native „	...	...	1	...	...	2	...	...	...	...	...	...	...	3	...
	Prisoners	666	...	...	...	...	...	...	...	...	...	...	...	...	†2	...
1859	European Troops	3,320	...	...	1	3	...	1	3	44	22	1	...	...	75	42
	Native „	1,355	...	...	...	...	1	...	...	35	10	...	...	...	46	16
	Prisoners	469	...	...	...	...	...	...	1	8	1	...	...	...	10	7
1860	European Troops	2,216	...	...	1	7	1	...	1	9	16	...	...	...	35	22
	Native „	1,308	...	2	25	6	1	1	...	3	...	...	...	...	38	17
	Prisoners	663	...	...	...	9	...	...	1	...	...	...	...	...	10	4
1861	European Troops	2,215	...	...		1	...	...	2	6	...	...	...	...	9	3
	Native „	633	...	...	1	...	...	...	...	...	1	4	...	...	6	1
	Prisoners	769	...	...	...	...	...	...	...	...	...	...	8	...	8	§6
1862	European Troops	2,093	...	...	...	1	...	...	...	1	...	...	...	...	2	...
	Native „	1,316	...	...	...	2	...	...	...	...	...	...	...	...	2	...
	Prisoners	882	...	1	...	6	1	...	...	...	...	...	...	...	8	...
1863	European Troops	2,420	...	...	...	...	...	...	23	15	1	7	...	...	46	25
	Native „	1,717	...	...	...	...	...	...	4	3	1		1	...	9	2
	Prisoners	1,981	...	...	...	...	...	...	219	1	3	34	45	3	305	153
1864	European Troops	2,470	...	...	...	...	...	...	...	...	54	1	...	...	55	39
	Native „	1,588	...	...	...	...	2	...	...	...	1	...	...	...	3	1
	Prisoners	2,550	...	...	3	...	...	...	...	...	...	...	...	...	3	...
1865	European Troops	1,884	...	...	...	1	2	...	...	14	6	...	...	...	23	20
	Native „	1,569	...	...	...	...	...	2	1	...	...	...	...	...	3	2
1866	European Troops	2,241	...	...	...	1	...	...	...	1	...	...	...	...	2	...
	Native „	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1
1867	European Troops	2,535	...	...	...	...	...	...	1	7	3	...	...	...	11	6
	Native „	1,590	...	...	...	...	...	2	3	...	...	...	...	...	5	4
	Prisoners	2,482	...	...	5	5	2	...	1	...	...	1	...	...	14	1
1868	European Troops	2,215	...	...	...	1	...	...	...	6	1	...	...	1	9	7
	Native „	1,617	...	...	...	...	...	...	1	1	...	...	...	...	2	2
1869	European Troops	3,107	...	...	1	...	...	1	5	115	...	...	...	...	122	97
	Native „	1,767	...	...	...	...	...	1	...	2	...	...	...	...	3	3
	Prisoners	2,825	...	...	...	...	...	...	...	...	2	...	...	...	2	2
1870	Native Troops	1,728	...	...	...	3	...	...	...	...	...	...	...	...	3	3
	Prisoners	2,777	...	...	...	...	1	...	...	...	...	...	...	...	1	1
1871	European Troops	3,152	...	...	...	...	...	1	...	1	...	...	31	...	33	17
	Native „	1,645	...	...	...	...	...	...	...	...	...	3	3	...	6	2
	Prisoners (Distt.)	838	...	...	...	...	...	...	...	...	...	...	3	3	6	3
1872	European Troops	3,187	...	...	...	...	4	...	12	21	16	2	2	...	57	37
	Native „	969	...	...	...	1	2	...	2	2	1	...	...	...	8	6
	Prisoners	2,726	...	...	...	...	...	...	...	3	...	...	...	...	3	...

* The strength with Oude Field Force.
† The months in which these two cases occurred cannot be traced.
‡ Deaths only recorded.
§ Twenty deaths are entered in the Annual Table.

Cawnpore.

CAWNPORE.—Immediately on the right bank of the Ganges, at an elevation of 413 feet above the sea. The station is partly civil and partly military, and contains an unusually large native population estimated at nearly 31,000. The city, which is close by, has about 85,000 inhabitants. The garrison consisted at time of the outbreak of 1st Battalion, 8th, the King's Regiment; A Battery, 19th Brigade, Royal Artillery; 1st Regiment Bengal Cavalry, and 35th Regiment Native Infantry. The district covers an area of 2,366 square miles, and contains 1,152,628 inhabitants.

No. 17, 8th Regiment.

II. Details of the outbreak.—In April six deaths from cholera occurred in the district. On the 1st May some deaths were reported from the city and bazaar, and the men of the 8th were in consequence prohibited from visiting these places. Among the Europeans, the first case occurred in the *8th*

Notes on outbreaks, Cawnpore.

Regiment, (Assistant Surgeon William George Ross), on the morning of the 8th May. Another case on the 11th, and from that time up to the 3rd June few days passed without some further seizure, but there was no great severity on any one date. Altogether they were as follows:—

	Strength.	Cases.	Deaths.
Officers	24	...	...
Men	825	21	14
Women	63	4	1
Children	98	...	...
		25	15

There were a few other cases of choleraic diarrhœa, which were not returned as cholera. The above statement, moreover, does not include a man of the regiment who was sent to the military prison at Lucknow and died there of cholera on the 2nd October. The cases appeared in ten different buildings. Eight buildings escaped.

No. 18, Royal Artillery.

In the Artillery, (Staff Assistant Surgeon J. J. O'Grady) the first case was on the 13th May. Two more followed on the 15th, and the fourth and last on the 18th. The results were as follow in this battery:—

	Strength.	Cases.	Deaths.
Officers	5	...	...
Men	131	2	2
Women	12	1	1
Children	20	1	1
		4	4

No. 19, 35th Native Infantry.

Of the two large single-storied barracks occupied by the battery, one had two cases, and the other entirely escaped. Another small building had one case, and the fourth occurred in camp. In the *Bengal Cavalry* there was not a single case either in the regiment or among the camp-followers. *In the 35th Native Infantry,* (Assistant Surgeon A. Deane), one officer was attacked on the 13th May and recovered; the house in which he lived was occupied by several others. It was not vacated, and none of them were seized. In the regiment a recruit was attacked on the 1st June. This was the only case in the regimental lines or bazaar. There were four cases among the European non-military residents; all occurred between the 16th and 23rd May. Neither diarrhœa nor fever was prevalent.

As regards the general population, it has been already stated that six deaths were reported in April. In May there were 413 deaths from cholera. Of these, 124 occurred in the city and suburbs including the cantonment bazars, in 52 different wards. The greatest mortality for this month in any one ward was 15. Twenty-six different villages widely scattered over the district were attacked in May. The largest number of deaths in any one village was 24. In 19 of them the mortality was less than five. In June there were 541 deaths from cholera throughout the district. Of these 90 occurred in city and suburbs, in 43 wards. Of these 24 were attacked in June, and the other 19 continued to suffer from the month previous. In two of the wards the deaths attained a maximum of seven during the month. In each of all the rest the number was under five. In this month 103 villages suffered. Of the 26 attacked in May six only continued to suffer in June. The greatest number of deaths in any one village in this month was 25. In 79 of them the total was under five. In very many of these there was only one death. In July the total deaths were 270. Of these 11 occurred in the city and suburbs, in 16 wards, of which three were now attacked for the first time. In one ward the deaths were 10. In all the others they were under 5. Fifty-nine villages suffered, of which 38 were attacked for the first time. The maximum deaths in any one was 21. In 49 of them the number was under five. In August there were 131 deaths, of which only four were in city and suburbs, 23 villages suffered. The largest number of deaths in any one was 10. In 16 of them it was under five. In September 162 deaths, of which none were reported from the city or suburbs; 25 villages suffered. In one there was a maximum of 13 deaths. In 14 of them the deaths were under five in each. In October, 81 deaths were reported in the district, none occurred in the city and suburbs, 12 villages suffered. In one, there were 14 deaths. In nine, less than five in each. In November there were two deaths, in December one.

No. 20, Cawnpore Jail.

In the *jail* a prisoner, one of 338, was attacked on the 9th May. No other case occurred.

III. Importation and communication.—In no section of the community was there any reason to suspect that the first case was due to importation. The matron of the female hospital of the 8th regiment was attacked while in attendance on cholera cases, but the many others who came in contact with the sick all escaped. In the 8th regiment the 11th case had attended the funeral of the 10th, and was seized the following day.

IV. Meteorology.—Dr. Ross observes—"The only peculiar atmospheric conditions were the absence of the regular hot winds and the consequent uncomfortable sultriness existing, with nasty muggy east wind and general electric state of the atmosphere." Dr. Deane observes "there was a steady east wind blowing."

V. Local conditions.—The *drainage* is reported to be good. The *water* is drawn in the usual method from wells, in which it stands about 40 feet from the surface. In no part of

Notes on outbreaks, Cawnpore.

the community were persons drinking water from any particular well specially attacked. On the contrary, of large numbers of persons deriving their supply from the same source, one or two only suffered. In the artillery both barracks were supplied from one well; one had three cases and the other none. In the city when several cases occurred in a ward, the well was closed, and this is said to have had a good effect. I applied to the Magistrate for exact information as to what occurred, but too long a time had elapsed, and the precise data requested could not be obtained. There was no *overcrowding.*

VI. Preventive measures.—Quarantine.—All that was attempted was to prohibit the men from visiting the city or suburbs once cholera had been reported. *Movement.*—In every case where the troops were concerned, any room in which a case occurred was immediately vacated, and the inmates removed either into tents or quarters. Of the 25 cases which occurred in the 8th Regiment, 17 were in barracks and 8 in tents, but with one exception all these eight seizures took place within a few hours of leaving an affected barrack. On the morning of the 14th May, A Company moved to tents at Ahirwan, about 2½ miles to the south of cantonment, one man was attacked on the march, and eight days afterwards a woman was seized. No more cases occurred. The company returned to barracks on the 24th, and kept free of the disease. On the 17th 18 families from affected quarters joined A Company, they had no fresh cases, and returned on the 22nd June. On the 18th May three other companies from two affected and one unaffected barracks marched to camp at Rameepore, 11 miles to the west. No more cases occurred. They returned on the 31st May and re-occupied their former quarters. On the next day, the 1st June, two cases were admitted from these companies. The men were immediately placed in tents on the parade ground, but three more cases occurred among them on the 2nd. They were then ordered to march back to Rameepore, but before they could leave, two more seizures had taken place. They started at 2 A.M. of the 3rd, re-encamped at Rameepore, and had no more cases. On the 26th and 28th June they returned to cantonment, and kept free of the disease. Two other companies which had not been attacked, but whose safety was believed to be endangered by the near proximity of infected building, were sent to Etawah on the 19th May, and remained in camp there till the 30th June. They had no cases. The remaining two companies, with the band and drums and a few married families, never left cantonments, but remained in barracks, spread over uninfected buildings as much as possible; not a single case occurred among them.

In the Royal Artillery the room in the large barrack in which the first case appeared on the 13th, was at once vacated. When the second case appeared in this barrack and when on the same date another case occurred in another building, both were abandoned, and the inmates removed to camp at Gowkhera, 5 miles on the Allahabad road. On the 18th another seizure took place, but this was the only other case. On the 31st May they returned to quarters and kept free of the disease.

Health in Camp.—The Artillery kept very well in camp, so did the 8th Regiment. In the latter several cases of sunstroke occurred, but from this those of them who had been left in quarters in the station suffered rather more. Between the 4th May and the 6th July the camps furnished nine cases and two deaths from this cause. In cantonment under the same heading there were, during the same period, nine admissions and three deaths.

VII. Previous History.—The last ten years compare very favorably with the history of the station in former times.

Statement of Cholera at Cawnpore, 1826 *to* 1872.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1826	European Troops -	1,763	...	...	1	1	1	2	18	14	1	3	3	1	45	22
	Native „ -	16,000*	...	1	5	8	5	13	5	3	2	2	1	1	46	14
1827	European Troops -	1,988	2	...	...	12	8	6	2	4	3	2	4	1	44	6
	Native „ -	16,848*	...	3	...	6	4	4	10	4	6	8	1	...	46	15
1828	European Troops -	2,192	4	3	3	...	1	12	39	30	11	1	1	2	107	33
	Native „ -	16,673*	...	1	3	3	6	5	12	18	4	..	21	1	74	23
1829	European Troops -	2,206	1	...	13	11	6	5	5	4	...	2	2	1	50	5
	Native „ -	...	2	...	6	5	4	1	3	4	...	...	...	1	26	3
1830	European Troops -	2,031	...	1	2	3	3	6	4	4	...	3	...	...	26	3
	Native „ -	13,708*	...	...	1	2	1	4	1	...	5	..	...	1	15	1
1831	European Troops -	2,039	...	...	4	2	11	11	1	1	1	...	...	...	31	2
	Native „ -	11,465*	2	...	2	2	4	2	3	1	1	1	2	...	20	1
1832	European Troops -	1,945	1	1	1	4	1	1	1	...	...	...	...	...	10	...
	Native „ -	10,768*	2	1	2	8	3	...	...	...	2	2	1	...	21	5
1833	European Troops -	1,842	1	2	...	...	3	1	8	91	179	1	1	...	287	101
	Native „ -	11,490	...	2	2	8	3	4	2	48	27	11	1	...	108	31
1834	European Troops -	1,885	...	...	1	...	2	1	2	3	2	2	...	...	13	8
	Native „ -	10,675	...	...	3	4	5	5	9	2	2	3	...	2	35	10
	Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7

* Strength of the Cawnpore Circle.

Notes on outbreaks, Cawnpore.

Statement of Cholera at Cawnpore, 1826 *to* 1872—continued.

Years.		Average Strength.	Number of Cases.												Total Cases	Total Deaths.
			January.	February.	March	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1835	European Troops	1,905	...	...	...	...	1	...	3	2	...	...	...	...	6	...
	Native „	14,099*	1	...	2	5	10	3	4	2	3	6	2	...	38	7
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
1836	European Troops	2,059	...	...	2	...	7	6	6	12	7	1	1	3	45	2
	Native „	14,157	...	2	4	5	2	2	...	3	1	2	...	3	24	3
1837	European Troops	2,049	...	...	1	...	2	4	10	79	1	3	2	...	102	32
	Native „	14,175*	...	1	18	7	10	24	37	16	13	6	1	19	152	45
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8
1838	European Troops	1,890	1	...	9	13	10	32	38	25	7	3	3	4	145	42
	Native „	12,768*	1	5	22	27	55	46	12	12	5	6	2	1	194	95
	Prisoners		...	...	...	...	...	...	...	...	...	...	...	...	...	6
1839	European Troops	1,277	1	...	1	3	9	5	5	9	4	3	1	...	41	8
	Native „	13,684*	1	...	3	5	6	6	5	8	8	1	5	1	49	18
1840	European Troops	1,271	1	1	1	1	6	7	3	2	2	1	...	2	27	...
	Native „	16,147*	2	3	9	2	8	6	2	1	5	...	2	...	40	11
1841	European Troops	1,336	1	...	...	...	1	17	49	11	2	1	...	...	82	15
	Native „	16,438*	1	...	...	3	1	13	38	12	1	6	9	2	81	27
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
1842	European Troops	1,583	...	...	...	...	...	...	2	104	2	...	...	18	126	61
	Native „	19,886*	...	...	6	7	8	13	29	46	12	3	...	...	124	46
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1843	European Troops	1,966	2	...	1	4	3	10	14	11	...	1	...	...	46	19
	Native „	16,824*	2	7	2	7	10	7	19	17	5	5	...	2	83	34
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1844	European Troops	2,297.	...	...	4	1	1	...	...	...	1	...	...	...	7	...
	Native „	16,539*	...	2	3	10	2	1	...	1	5	...	...	...	24	7
1845	European Troops	1,944	...	...	5	4	...	100	15	8	22	1	1	...	156	68
	Native „	5,451	...	1	3	10	2	33	19	6	4	3	...	...	81	30
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1846	European Troops	1,487	...	...	2	...	...	...	...	...	...	...	...	...	2	...
	Native „	12,626*	...	...	3	5	2	3	5	2	1	1	1	...	23	5
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1847	European Troops	1,102	...	...	...	...	...	...	...	5	3	...	...	...	8	8
	Native „	10,452*	...	...	3	6	5	4	3	2	2	3	6	1	35	7
1848	European Troops	789	...	...	1	2	31	28	49	63	7	...	...	...	181	67
	Native „	11,268*	2	...	15	11	19	30	24	19	11	3	...	...	134	39
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1849	European Troops	786	...	...	...	...	...	...	80	2	1	...	...	...	83	33
	Native „	13,974	9	...	3	...	29	30	74	12	3	2	5	...	167	59
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
1850	European Troops	...	...	...	...	1	5	2	...	...	...	...	...	...	...	8*
1851	European Troops	...	...	...	...	...	...	...	...	5	2	...	...	...	...	7*
	Native „	2,711	...	1	11	14	4	4	6	18	1	2	...	7	68	21
1852	European Troops	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2*
	Native „	9,662	...	...	2	3	4	2	2	2	1	...	1	1	18	1
1853	European Troops	981	...	...	...	...	4	30	64	97	...	...	...	...	...	195*
	Native „	2,626	...	...	...	13	15	6	3	35	2	...	...	...	74	31
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1854	Native Troops	...	2	...	1	3	6	4	4	...	...	...	...	...	20	3
	Prisoners	876	...	...	...	1	1	41	26	...	...	...	...	...	69	13
1855	Native Troops	...	...	...	...	...	2	...	1	7	7	1	1	...	19	7
	Prisoners	674	...	...	...	...	...	...	...	50	22	...	...	...	72	3
1856	European Troops	479	...	...	...	...	...	...	6	...	...	...	...	...	6	2
	Native „	4,560	...	...	2	5	11	3	9	7	1	1	...	...	39	17
	Prisoners	546	...	...	...	...	1	...	2	...	...	...	...	...	3	2
1857	European Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	123†
1858	European Troops				Included in the Return for Allahabad											
	Native „	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	Prisoners	275	...	...	...	...	...	...	1	...	...	...	...	...	1	...
1859	European Troops	1,372	...	...	...	...	12	1	2	44	4	2	...	...	65	54
	Native „	3,722	...	...	...	...	...	...	13	42	...	...	...	...	55	23
	Prisoners	75	...	...	...	...	...	...	...	...	1	...	...	...	1	...
1860	European Troops	1,228	...	...	5	12	1	...	2	19	4	...	...	...	43	24
	Native „	1,024	...	...	4	7	4	2	2	3	...	1	...	...	23	6
1861	European Troops	1,230	...	...	1	...	8	9	10	19	...	...	1	...	48	35
	Native „	876	...	...	...	1	8	9	...	2	...	...	...	...	20	8
	Prisoners	203	...	...	...	...	...	3	...	...	...	...	...	...	3	...
1862	Native Troops	817	...	1	1	1	...	...	...	...	...	...	...	...	3	...
1863	European Troops	1,162	...	...	...	...	...	...	...	10	6	1	...	...	17	24
	Native „	594	...	...	...	1	...	1	...	1	...	...	...	...	3	1
1864	European Troops	1,131	...	...	...	...	...	1	...	4	1	...	...	...	6	6
1865	European Troops	880	...	...	...	...	...	...	...	...	1	...	...	...	1	1
	Native „	573	...	...	...	...	...	10	...	...	...	...	...	...	10	4

* Fatal cases only entered.

† Out of these 40 were among the Madras Fusiliers between 25th July and 3rd August; 13 in the 64th Regiment, Bombay (7 in August and 6 in September); 16 in the 78th Regiment, Bombay, in August, and 54 in the Bengal Army (14 in July, 37 in August and 3 in September) in the camps.

Notes on outbreaks, Cawnpore.

Statement of Cholera at Cawnpore, 1826 to 1872—concluded.

Years.		Average Strength.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Cases.	Total Deaths.
			Number of Cases.													
1867	European Troops -	691	...	...	...	...	1	...	2	...	...	...	...	...	3	2
	Native „ -	796	...	...	...	...	...	1	...	...	...	...	...	...	1	1
1868	European Troops -	722	...	...	...	...	...	...	...	3	...	...	...	..	3	...
	Native „ -	644	...	...	...	...	...	...	...	1	...	...	...	...	1	1
1869	European Troops -	1,310	...	...	...	...	...	2	12	13	...	...	..	...	27	17
	Native „ -	987	...	...	...	...	...	...	...	2	...	...	...	...	2	1
1871	European Troops -	1,042	...	...	1	...	2	...	...	...	...	...	...	...	3	1
1872	European Troops -	1,107	...	...	...	...	22	8	...	...	...	...	...	...	30	20
	Native „ -	808	...	...	...	...	...	1	...	...	...	...	...	...	1	1
	Prisoners -	365	...	...	...	...	1	...	...	...	...	...	.	...	1	1

Allahabad.

ALLAHABAD.—The station and city lie at the junction of the Ganges and Jumna at an elevation of 316 feet above sea level. The city is on the left bank of the Jumna, and contains a population of 74,671. The station, commencing close to the city, extends for several miles over the triangular area. In addition to the military force there is a large community belonging to the East India Railway Company, and many residents connected with the offices of the Government of the North-Western Provinces, of which Allahabad is the capital. The district which extends on both sides of the two great rivers has an area of 2,794 square miles, and a population of 1,382,826. The garrison consisted of E. Battery, 19th Brigade, Royal Artillery, No. 7 Battery, 23rd Brigade, Royal Artillery, both in the old barracks known as the Papamhow lines; the 2nd Battalion, 19th Foot, occupying the new double-storied barracks, with the exception of 161 men at the fort, the 11th Bengal Cavalry and 33rd Native Infantry. The native non-military population of cantonments is returned as 6,450.

II. Details of the outbreak.—On the 12th of January the Magh Mela Fair, which is held on the dry bed of the rivers underneath the fort, just at the point where the two meet, commenced, and, as usual, attracted crowds of pilgrims from all quarters, but no cholera was reported either here or from any part of the district in this month. In February 17 deaths were reported, of which seven occurred in the city and suburbs, and the others on the east of the district bordering Oudh. In March there were 239 deaths, of which one only was in the city. The main force of the disease fell on the mortuary circles bordering Oudh, but there were a few on the right bank of the Ganges. In April the deaths from cholera were 1,894, of which only 10 were in the city and suburbs; the disease in the district observed a general distribution very much the same as it had been in March. In May the number of deaths fell to 1,034, of which six occurred in the city and suburbs. The disease was not widely spread on the right bank of the Ganges, but in one or two places here it was severe. In June the deaths numbered 299, of which only three were in the city and suburbs. In July, 39, of which 12 were in city and suburbs, chiefly in the last days of the month. In August, 46, but it is to be observed that of these 44 were in the city and suburbs. In September, 26 deaths, of which six were in the city and suburbs. In October, 18, all of them in the rural circles, one followed in November and two in December.

No. 21, Royal Artillery.

In the *Artillery*, (Assistant Surgeon J. B. Hamilton, M. B.) there were only two cases, one on the 19th, and the other on the 28th April, the latter was a man who had been for a week in the fort. Of six blocks of buildings in the lines only one was attacked. Besides the two cases above noted there were 11 others of a suspicious character occurring at intervals between the 9th April and 2nd September. They occurred, two on the 9th April, two on 12th, one on 11th May, one on 30th July, one on the 3rd, one on the 5th, one on the 17th, one on the 22nd August, and one on the 22nd September. Among the Lascars and in the Royal Artillery Bazaar three persons also were attacked, one on the 8th April, the second on the 13th, and the third on the 16th.

No. 22, 2-19th Regiment.

4th August ...	1	13th August ...	3
5th „ ...	2	14th „ ...	3
7th „ ..	2	15th „ ...	3
8th „ ...	2	16th „ ...	3
9th „ ...	7	17th „ ...	1
10th „ ...	11	19th „ ...	1
11th „ ...	8	30th „ ...	1
12th „ ...	2		

In the 2-19*th Regiment*, (Staff Surgeon W. Ashton, M. B.) the first case occurred in the cantonment on the 25th March, and a second on the 3rd April. On the 28th April a man was seized in the fort. The 3rd May and the 4th again furnished each one case from the cantonment. On the 6th there was a second and last seizure in the fort and on the 17th two cases in the cantonment. There was then an interval of over 10 weeks, when, on the 4th August, the disease re-appeared in the regiment. Including men, women, and children its course from this date was as shown in the margin.

Notes on outbreaks, Allahabad.

The total numbers of cases and deaths throughout the year are shown in the following statement:—

	Strength.	Admissions.	Deaths.
Officers	24	1	1
Men	643	43	24
Women	98	6	5
Children	190	8	7
		58	37

The disease was widely distributed over the lines. The cases were admitted from 24 different buildings, only six escaped. Diarrhœa was not prevalent. With cholera fevers increased. In the week ending 2nd August there had been seven fresh cases. In the next week there were 19. The regiment had been nine years in India and had been in excellent health, but immediately before the outbreak a few cases of dengue appeared, and this disease was very prevalent in the latter half of August and beginning of September.

In the *11th Bengal Cavalry,* (Assistant Surgeon W. Finden) whose lines are at Papamhow, beyond the Artillery, there were no cases of cholera either among the men or the followers.

No. 23, 33rd Regiment, N. I.

In the *33rd Regiment, N. I.,* Assistant Surgeon E. R. Johnson, with a strength of 582 sepoys and 488 followers, the first case occurred on the 1st May. Between this date and the 14th, there were in all eight cases, four among the sepoys and four among the followers. No further seizures took place till August, when, between the 12th and 17th, there were four, three among the sepoys, and one a follower. Then there was another lull till the 8th of October, when a follower was attacked, and on the 13th another, the last case.

No. 24, East Indian Railway.

Among the *Railway employés,* (Surgeon John Jones), numbering some 800 Europeans and Eurasians and 3,000 Natives, the first case occurred on the 27th July, when two men were attacked in different rooms of the same building, within a few hours of each other. Altogether up to the 11th August, when the last seizure took place, there were 12 cases, of which 11 proved fatal. There were besides about 20 cases among the native servants, but no account of them has been kept. The disease was confined to no particular quarter, but appeared at distant points over the area occupied by the railway barracks. Of 131 separate buildings seven furnished cases.

No. 25, general civil residents.

Among the *general civil residents* of the station, European and Eurasian, estimated at about 2,000, there were nine deaths from cholera, the first having been on the 12th August, and the last on the 21st September. Among these were several persons occupying a high position in society. Diarrhœa of a severe form was prevalent.

No. 26, Central Prison.

In the *Central Prison,* (Assistant Surgeon R. Jameson, M. D.) with a strength of 1,592 prisoners and 142 men composing guards, no cases occurred except one among the police on the 16th May.

No. 27, District Jail.

In the *District Jail,* with 862 prisoners and 85 of a guard, there were seven cases and five deaths. The first three occurred in a gang employed in the Alfred Park, between 2 P.M. of the 27th and 1 P.M. of the 28th April. These three men slept side by side in one of the barracks in the park. On the 6th August a man was attacked while on out-gang at Government House. On the 28th, another was seized in hospital, and another in the cells. On the 8th September the last case occurred in the under-trial ward.

III. Importation and communication.—The first two cases which came under medical observation in the Allahabad district, occurred at the fair on the 31st January. Cholera had, for some time previous, been prevalent in Oudh, and a representation was made that it would be dangerous to allow the fair to be held. To this, however, the civil authorities would not assent. Dr. Jones, the Civil Surgeon, is of opinion that the disease spread subsequently by means of the pilgrims, but there are no detailed facts in support of this idea.

In the Artillery, Dr. Hamilton was unable to find any fact leading to the suspicion that the disease had been imported, or that it had spread from one person to another. The first case was treated in a ward of the hospital without any bad result.

In the 2-19th there was the same want of evidence. The men of the regiment are said to have been in the habit of frequenting the railway barracks, but on the 2nd August, shortly after the first case occurred in that part of the station, all further communication was prohibited. From the Civil Surgeon I learned that some soldiers of the 2-19th had been drinking on the night of the 31st July with the railway man attacked next day, but they were not seen about these barracks after his seizure. It was necessary to employ soldiers of this regiment to attend on the sick, as the native servants supplied would not remain. Of 30 soldiers so employed, and they were all volunteers, five were attacked with cholera, and four died. They all lived in a barrack by themselves, close to the barrack which was used as a cholera hospital. Both these buildings belong to the new artillery lines, and were vacant when the outbreak commenced. The first of these orderlies was attacked on the 11th August, the room was not vacated as it was inferred that the disease was due to infection.

Notes on outbreaks. Allahabad.

Other cases among them followed on the 12th, 13th, 15th, and 16th. On the 10th September the men re-joined their several companies in camp. Of the 30 men 25 were in attendance on cholera cases for periods varying from 26 to 38 days, and all these escaped. The five who were seized were on this duty for from three to six days. One of the sweepers of the cholera hospital was attacked. The only officer attacked was one of the Assistant Surgeons, Dr. Dickson. He was suffering from dengue at the time, and was in a weak condition. He had not been in attendance on any cases of cholera.

In the 33rd *Native Infantry* also Dr. Johnson could not trace the disease to importation. The first man attacked had been attending a comrade in hospital ill of diarrhœa. He had been employed on this duty for six days, he slept in hospital and spent the greater part of his time there. On the 30th April he returned to the lines, was seized with diarrhœa that evening and admitted next morning with cholera. On the same day, the 1st May, another patient in hospital was seized. In August an attendant on a cholera case was also attacked. Both the men came from one end of the same barrack. The cases among the followers occurred in different parts of the bazaar, and no connection could be traced between them. Some died in their huts, and the disease did not spread among their occupants. In the *railway* barracks it was at one time believed that the disease had been imported by one of the boys from St. Peters' College, Agra. The facts are these—On the night of the 6th July a boy named Elias arrived at one of these barracks, having left Agra that morning. He was accompanied by three others, Eastwood, Carberry, and Shea. Elias had been purged on the way. Diarrhœa continued during the night, and next morning he was evidently laboring under cholera. He died on the 9th. The family occupying the quarter into which Elias was received, consisted of a man and his wife and 10 children. As soon as it was known that Elias was suffering from cholera, the children were sent away. None of them were attacked. On the 7th Shea also suffered from severe diarrhœa and vomiting. The family consisted of the father, mother, and three children, none of them were attacked. Eighteen days after Elias' death the first case of cholera appeared among the railway people in a barrack some distance off, and with the inmates of which I was informed that there had been no communication whatever. During the outbreak no connection could be traced between different cases. Of 16 persons constantly employed to attend the sick in hospital, none suffered. Through a mistake the clothes and bedding of some of those who died of cholera, and which were much soiled with cholera discharges were sold by auction and distributed among the residents. No evil results followed. It may be noted, also, that three boys, sons of the apothecary, returned to their father from St. Peters' College, Agra, on the night of the 7th July. They went to a friend in Agra for the day previous. None of them showed any symptoms of illness. Regarding the ordinary *civil residents* of the station there was no reason to suspect importation. The boy Carberry who came from Agra on the 6th with Elias was attacked with vomiting and purging next morning. The family consisted of eight persons besides himself. No precautions were taken, the boy slept in the same room with four of the others, and none of the household were seized. The boy Eastwood who accompanied Elias and Shea from Agra was also seized on the following morning, the 7th, and died the same day. None of the other members of the family, which was large, suffered.

In the case of the *Central Prison* an attempt was made to isolate the inmates, but no real isolation was possible as the guard were constantly at their houses in the neighbouring villages, in some of which cholera was for a time very prevalent. The wife of one of the warders, Costello, had gone to Agra to see after her two children on the morning of the 5th July. When she went to St. Peters' College to visit them she found several of the boys ill with cholera. She immediately removed her own children and remained at a friend's house in Agra that day. At night one was attacked with cholera and the other severely purged. On the 6th she returned to Allahabad in the same train which brought Elias, Eastwood, Carberry and Shea. Both the children recovered. Neither in their family nor in the neighbourhood did any further cases follow their arrival.

In the *District Jail* also isolation was practically impossible. Dr. Jameson could find no evidence of importation nor could he trace any connection between the different cases. None of the attendants on the sick were attacked.

IV. Meteorology.—Dr. Ashton mentions that "6½ inches of rain fell on the night of the 3rd and 4th." The first case of the outbreak occurred on the evening of the 4th August.

V. Local conditions.—The *drainage* is all surface, and in some parts of the station, especially in the lines of the European Infantry Regiment, is not so good as it ought to be. *Water.*—In the Artillery the water for drinking is drawn from *one* well. The same system was adopted in the 2-19th, and here it was passed through a large Atkin's filter before use, and then distributed in earthen vessels to all the barracks. In the other communities the supply was drawn from several sources, but no connection could be traced between the cases and the use of any particular water. Those who were attacked and those who escaped drew from the same source. In the Native Infantry lines, 2 of those attacked drew their water from the Ganges, 3 from the hospital well, 3 from the well in the right wing, 3 from the quarter guard well, and 2 from a private well in a Subadar's compound. No pumps are in use. In no case was there any *overcrowding*. The ground in the vicinity of the artillery was reported to have been in a very filthy state. It is beyond cantonment limits. In no other instance was any complaint made of want of *cleanliness*.

Notes on outbreaks, Allahabad.

VI. Preventive measures.—Movement.—In the Artillery no movement was made beyond evacuating the quarter in which the woman was attacked. The detachment of the 2-19th quartered in the fort was moved into camp on the parade ground within the walls when the two cases, one among them and the other in the Artillery, occurred on the 28th April. On the 6th May a seizure took place in these tents. It was the only one, and they returned to barracks on the 13th May. In August the movements of the 2-19th at first were made into spare buildings. On the 10th August three companies went into camp at Begum Serai, 4 miles on the Cawnpore road, there had been ten cases in these companies before leaving cantonments. Five more followed at Begum Serai, one on the 13th, two on the 14th, and two on the 16th. On the 18th they moved by rail to Serajpore, 30 miles down the Jubbulpore line, one man was admitted on the 19th, but no other seizures took place. They remained in this camp till the 16th October, and then returned to barracks in excellent health. On the 14th, 15th, and 16th August three other companies moved by rail to Burgurh, 40 miles down the Jubbulpore line. There had been 29 cases among them before leaving cantonment. With the move the disease entirely disappeared. They remained in camp till the 19th October, and then returned to barracks much improved by the change. On the 17th and 18th August, a mixed camp of men, women, and children moved into tents on the rifle range about half a mile from the lines. Among them there had been 18 cases in barracks. Two followed in camp, one on the 18th August and the other on the 1st September. Of the 58 cases, 49 occurred in barracks and 9 in tents, *viz.*, one in fort, five at Begum Serai, one at Serajpore, and two at the rifle range camp. In the *33rd Native Infantry* the hospital was vacated as soon as cholera appeared, and the inmates sent on leave for a month. In the *Railway* lines the barrack in which the two first cases appeared was at once vacated, and a case afterwards occurred among the inmates after their removal to another quarter. No other building was vacated. In only one instance did another barrack furnish more than a single case, and here the attack of a mother and her three children was almost simultaneous. In the *District Jail*, the barrack occupied by the prisoners who were attacked in the Alfred Park was vacated, and no further cases occurred. In the other buildings, both here and in the jail, a second case was awaited before removal, and as no second case occurred in any one barrack, no movement was made.

VII. The *previous history* of Allahabad in respect to cholera has been most unfavorable, as shown in the following statement:—

Statement of Cholera at Allahabad, 1826 to 1872.

Years.	Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
		January.*	February.	March	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1827 European Troops -	85	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Native „ -	8,101*	...	1	...	...	4	...	...	4	6	1	1	1	18	11
1828 Native „ -	7,832*	...	1	1	...	7	5	11	26	12	2	...	...	65	19
1829 Native „ -	...	1	...	...	2	...	1	1	5*	...	1	1	...	12	1
1830 Native „ -	6,656*	...	...	...	...	...	...	...	...	1	1	...	...	2	2
1831 Native „ -	4,969*	...	...	3	...	...	...	1	3	2	...	...	...	9	...
1832 European „ -	169	...	...	...	...	...	1	...	...	...	...	...	...	1	...
Native „ -	4,615*	...	...	...	...	1	...	...	1	...	...	...	...	2	1
1833 European „ -	94	...	1	...	...	...	...	...	1	...	...	...	...	2	...
Native „ -	4,802*	...	...	1	1	...	2	...	14	5	...	...	...	23	12
1834 Native „ -	4,665*	...	...	...	...	4	5	...	...	...	...	...	...	9	6
1835 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1837 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1838 Prisoners -	...	...	..	...	...	...	...	...	...	...	...	...	...	...	16
1839 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
1840 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9
1841 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	..	...	...	14
1842 Prisoners -	...	..	...	...	...	...	...	...	...	...	...	...	..	..	16
1843 European Troops -	837	...	...	...	...	17	5	...	...	...	...	...	...	22	10
1844 European „ -	908	...	...	...	...	2	...	2	21	36	...	...	...	61	30
Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
1845 European Troops -	248	..	...	...	...	...	2	9	1	...	...	...	...	12	8
Native „ -	2,326	...	...	...	...	1	1	4	4	1	1	...	...	12	4
Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	67
1846 European Troops -	490	...	...	...	...	...	2	...	...	1	...	...	...	3	2
Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	..	1
1847 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1848 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
1849 European Troops -	...	...	...	...	...	...	...	...	...	32	2	...	...	34	26
Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	38
1851 Native Troops -	2,105	1	1	...	..	...	1	4	1	...	...	...	...	8	2
1853 Native „ -	2,076	...	...	...	...	...	...	11	8	1	...	...	...	20	7
Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14
1854 Native Troops -	..	...	...	1	2	3	...	...	...	...	...	1	...	7	3
Prisoners -	874	...	...	2	...	...	6	...	1	...	...	...		9	4

* Strength of the Allahabad Circle.

Notes on outbreaks, Allahabad.

Statement of Cholera at Allahabad, 1827 *to* 1872—continued.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1855	Native Troops	...	...	1	1	...	...	...	1	3	1	...	1	...	8	2
	Prisoners	1,384	...	...	...	...	...	...	26	38	...	...	...	...	64	33
1856	Native Troops	2,025	...	...	1	2	4	3	2	...	...	...	...	...	12	6
	Prisoners	2,039	...	...	...	1	29	...	...	...	...	...	...	...	30	19
1857	European Troops Depôt.	...	...	...	...	...	...	...	2	3	...	1	...	...	...	6*
1858	European Troops	4,788†	4	1	5	2	1	2	2	...	...	4	2	...	23	11
	Prisoners	635	...	...	...	...	...	...	1	...	...	...	...	...	1	1
1859	European Troops	2,504	1	...	...	38	111	13	18	52	1	3	...	1	238	129
	Native "	783	...	1	...	1	...	...	...	...	...	...	...	...	2	1
	Prisoners	1,459	...	...	...	...	20	26	6	14	13	...	...	...	79	49
1860	European Troops	2,460	...	2	20	19	2	...	2	2	1	1	5	...	54	27
	Native "	706	...	...	3	8	8	1	2	...	...	...	...	...	22	14
	Prisoners	1,595	...	...	...	10	1	2	...	...	...	...	.	...	13	8
1861	European Troops	1,277	...	...	...	...	4	2	20	4	...	2	...	...	32	21
	Prisoners	1,730	...	...	...	...	56	3	6	1	...	...	...	...	66	26
1862	Native Troops	488	...	...	1	1	...	...	...	...	...	...	...	...	2	1
	Prisoners	1,979	...	1	1	...	...	...	...	...	...	...	...	...	2	1
1863	European Troops	1,054	...	...	...	1	3	...	26	24	...	...	...	...	54	44
	Native "	643	1	...	...	3	1	...	...	2	...	...	...	...	7	4
	Prisoners	2,233	...	1	...	2	...	...	4	...	1	...	...	1	9	5
1864	European Troops	950	...	...	2	...	...	...	...	...	11	...	...	...	13	12
	Native "	518	...	...	...	...	...	2	...	...	...	...	...	...	2	2
	Prisoners	2,192	...	...	...	1	...	101	...	1	...	...	...	...	103	28
1865	European Troops	1,013	...	...	...	6	...	...	...	5	3	...	...	...	14	10
	Prisoners	2,346	...	...	...	...	...	...	...	8	...	...	...	...	8	2
1866	European Troops	1,020	...	...	...	...	...	...	3	4	1	...	...	...	8	4
1867	European "	958	...	...	...	...	...	...	2	26	...	...	...	...	28	18
	Native "	627	...	...	...	...	...	...	...	7	...	...	...	...	7	4
	Prisoners	1,985	...	...	24	3	...	...	...	...	...	...	...	...	27	14
1868	European Troops	910	...	...	...	...	...	...	...	1	1	...	...	...	2	2
	Native "	785	...	...	...	1	...	...	1	...	1	...	2	1	6	5
	Prisoners	1,848	...	...	2	...	...	...	...	...	...	...	...	...	2	2
1869	European Troops	1,141	...	1	32	14	20	26	11	44	...	...	...	...	148	106
	Native "	901	...	...	...	1	2	2	4	6	...	...	...	...	15	7
	Prisoners	2,376	...	...	...	...	...	...	8	11	...	...	...	...	19	7
1870	European Troops	484	...	1	...	...	...	...	...	...	...	...	...	...	1	...
	Native "	824	...	1	...	...	...	...	...	...	...	...	...	...	1	1
1871	European Troops	993	...	...	3	3	2	1	...	...	...	...	...	...	9	8
	Native "	958	..	...	...	...	...	...	...	...	...	...	1	...	1	1
1872	European Troops	1,378	...	...	1	3	5	...	...	49	1	...	...	...	59	38
	Native "	904	...	...	...	...	4	...	...	3	...	...	...	...	7	4
	Prisoners	2,521	...	...	...	3	...	...	...	2	2	...	...	...	7	5

* Besides these there were 52 deaths from the disease among the Madras Fusiliers in June.

† Including those at Cawnpore.

No. 28, Shajehanpore.

SHAJEHANPORE is one of the districts of Rohilcund, and lies to the south and east of Bareilly. It contains 2,328 square miles, and 945,705 inhabitants. The town has a population of 70,000. The cantonment was garrisoned by the 2nd Battalion of the 1st Foot and a Wing of 45th Native Infantry.

II. Details of the outbreak.—In the district a few deaths have been entered in each of the first six months of the year. In July they rose from 12, the maximum in any one of the previous months, to 66. In August they were 1,318, in September 1,214, in October 1,449, and in November 306. They then again declined rapidly. The total mortality assigned to cholera throughout the year was 4,403. In the city which is included in the above the disease was severe and long continued. In August alone there were 502 deaths here, and in September 19. In the garrison there were only 11 cases, six among the Europeans, and five among the natives. They occurred, two on 6th August, one on the 7th, two on the 10th, two on the 14th, one on the 15th, one on the 17th, one on the 21st, and one on the 6th September. The disease pursued an erratic course. Surgeon H. Kelsall mentions that from the 8th to the 14th August several men of the H. Company from No. 8 barrack suffered from diarrhoea, in one or two instances attended with vomiting.

III. Importation and communication.—The first case could not be traced to importation, nor was there any evidence to lead to the belief that the disease was spread by contagion. None of the attendants on the European cases were attacked. One of the sepoys was seized in hospital while attending a case of cholera, but the period of attendence and other particulars are not stated.

Notes on outbreaks, Shajehanpore.

IV. Meteorology.—Dr. Harris, the Civil Surgeon, and holding the medical charge of the Wing of the 45th Native Infantry, states that there was nothing peculiar in the meteorology of the year. Dr. Kelsall mentions that the "prevailing winds were from the east."

V. Local conditions.—The *drainage* of the station is reported to be good and its general sanitary condition excellent. *Water* is of good quality, drawn from wells. There was no *overcrowding.*

VI. Preventive measures.—Quarantine.—It is stated that the civil authorities tried to stop travellers at fords or bridges on roads leading from infected parts of the district, but there does not appear to have been any attempt at a regular quarantine. *Movement*—On the 14th August the married families of the right half battalion of the Royal Scot, 90 in all, including men, women, and children, moved into camp about 2 miles to the north of the station upon the outer circular road; only one case occurred there. On the 11th August the 45th Seiks moved into camp 5 miles east of cantonment. The general health of those under canvas seemed rather to improve by the change.

VII. Previous History.—Has generally been very favorable.

Statement of Cholera at Shajehanpore, 1845 *to* 1872.

Years.		Average Strength	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1845	Native Troops	1,048	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1851	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1853	Native Troops	963	...	...	...	...	...	...	...	5	...	...	...	...	5	2
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	28
1856	Native Troops	1,033	...	...	...	2	...	...	...	...	...	...	...	...	2	...
	Prisoners	700	...	...	...	...	1	102	19	...	...	1	...	...	123	29
1859	European Troops	688	...	...	...	...	...	...	...	1	...	...	...	...	1	1
	Native "	946	...	...	...	...	...	...	...	1	...	...	...	...	1	1
	Prisoners	304	...	...	...	...	...	...	...	...	...	...	1	...	1	...
1860	European Troops	510	...	...	1	3	...	...	...	...	...	...	...	...	4	3
	Prisoners	331	...	...	1	...	...	...	...	...	...	...	...	.	1	...
1861	Prisoners	524	...	...	1	2	...	...	...	...	...	...	...	...	3	...
1862	European Troops	530	...	1	...	...	1	...	...	1	...	...	...	...	3	3
1864	Native Troops	309	...	...	...	1	...	...	...	...	...	...	...	...	1	...
1867	European Troops	472	...	...	...	...	...	...	...	23	1	...	.	...	24	19
	Native "	207	...	...	...	2	...	...	...	3	...	...	...	...	5	3
	Prisoners	277	..	...	...	...	1	...	3	18	...	...	...	...	22	6
1869	European Troops	584	...	...	1	1	...	...	...	...	...	...	...	...	2	...
	Native "	337	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	Prisoners	295	...	...	...	...	...	...	1	...	...	...	...	...	1	1
1870	Native Troops	359	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1872	European Troops	476	...	...	...	...	...	...	...	5	1	...	...	...	6	4
	Native "	242	...	...	...	...	...	...	5	...	...	...	...	...	5	3
	Prisoners	254	...	...	...	...	...	...	1	...	..	...	...	...	1	1

No. 29, Chuckrata.

CHUCKRATA.—(Surgeon J. B. Roe, M.B.), a hill station situate over the Western Doon. In 1872 it was occupied by the 92nd Highlanders.

II. Details of the outbreak.—There were five cases in the Regiment, two on August 12th, one on 15th, one on 5th, and the last on 7th September. "The progress of the disease was erratic in the extreme, it would not have been possible to separate the cases more widely from each other than by placing them where they actually did occur." Of the five cases three recovered. There was no tendency to bowel complaints. Only two cases occurred in the bazaar and both recovered. In some of the surrounding villages there were also cases. Many of them were in persons who had recently returned from Deyrah.

III. Importation and communication.— "There was constant daily communication with Deyrah *viâ* Kalsi where the cholera prevailed," but there is no evidence to show that the first case was due to importation. "No connection could be traced between the earlier cases and the subsequent ones. None of the hospital attendants, either Europeans or Natives, suffered in any way. When each case occurred, four of the men occupying the same room accompanied the patient to the cholera ward and were kept isolated along with him."

IV. Meteorology.—"The barometric pressure was rather below than above the average. There was a heavy fall of rain the day before the two first cases occurred, the day was foggy, but not excessively so. The direction of the wind was northerly."

V. Local conditions.—There was no *overcrowding.*

VI. Preventive measures.—Quarantine was established on the Jumna on the 6th August, but it was afterwards ascertained that cases had occurred on this side. When this became

Notes on outbreaks, Chuckrata.

known, an inner line of quarantine was placed closer to the station on the 8th. The inmates of huts where a case occurred were immediately removed and placed in tents. No further seizures took place among them after removal.

VII. Previous History.—Chuckrata has been a station only since 1869. No case of cholera has occurred in any year except one in the month of June 1870.

No. 30, Deyrah.

DEYRAH.—*Assistant Surgeon G. G. Maclaren, Civil Surgeon.*—The district lies at the foot of the Himalaya, between the Jumna and Ganges as these rivers emerge from the hills. The area is 1,020 square miles, and the population 116,981. The town of Deyrah has about 14,000 inhabitants. In the cantonment there was only one Regiment, the 2nd Goorkhas.

II. Details of the outbreak.—During the first six months of the year, only two deaths from cholera were registered in the whole district, one in February and one in June. In July the number rose to 54, and in August to 175. It then rapidly declined. Of the deaths in August 163 were in the city. In the 2nd Goorkhas (Surgeon-Major F. F. Allen) eight sepoys were attacked and all died. Among the followers ten cases and six deaths. Diarrhœa was very common before and during the outbreak. The disease was general in its distribution. The dates of the admissions from cholera and diarrhœa are given in the annexed statement in which the deaths from cholera in the town are also entered.

Cholera at Deyrah in 1872.

DATE.		2ND GOORKHAS.				Cholera deaths in the Town.
		CHOLERA CASES.		DIARRHŒA CASES.		
		Sepoys.	Followers.	Sepoys.	Followers.	
July	26th	...	...	1	...	...
,,	27th	...	...	...	...	...
,,	28th	...	...	2	...	...
,,	29th	...	...	...	...	...
,,	30th	...	...	1	...	...
,,	31st	...	...	1	...	...
August	1st	...	...	...	...	12
,,	2nd	1	...	...	...	11
,,	3rd	...	...	1	...	15
,,	4th	...	...	...	...	8
,,	5th	...	...	...	...	12
,,	6th	2	1	...	...	9
,,	7th	...	...	...	...	7
,,	8th	...	...	...	...	6
,,	9th	...	...	...	...	4
,,	10th	...	...	...	...	6
,,	11th	1	...	2	...	3
,,	12th	...	...	1	...	5
,,	13th	...	...	...	...	1
,,	14th	...	...	1	...	3
,,	15th	...	...	...	...	4
,,	16th	...	...	...	...	4
,,	17th	...	...	...	...	4
,,	18th	...	1	...	...	6
,,	19th	2	3	...	...	6
,,	20th	...	1	...	...	2
,,	21st	1	1	...	...	9
,,	22nd	...	...	1	1	3
,,	23rd	...	1	...	2	2
,,	24th	...	...	...	...	6
,,	25th	...	...	...	...	12
,,	26th	...	...	...	...	1
,,	27th	1	...	...	...	2
,,	28th	...	1	...	...	...
,,	29th	...	1	...	...	...
,,	30th	...	...	...	...	...
,,	31st	...	...	...	...	...
September	1st	...	...	...	...	...

III. Importation and communication.—The first case of undoubted cholera in the Doon was that of the boy O'Neill from St. Peters' College who was suffering from the disease on the 6th July on his way to Mussoorie, but there is no evidence to connect any other seizures with him. The disease was general over the station and confined to no particular locality. No instance is adduced in which there was reason to believe that the cholera spread from the sick. None of the attendants, so far as stated, were attacked.

Notes on outbreaks, Deyrah.

IV. Meteorology.—The rain-fall was less than in the preceding year, but the maximum range of the thermometer below that of 1871. "No steady down-pour of rain took place, whilst the valley was enveloped in a dense fog, such as I never before noticed in the Doon. The rains were not ushered in with the usual storms. Little rain took place comparatively in August till the 18th, when it rained continuously till the 20th. In the evening the clouds had a peculiar appearance exactly similar to a distant dust storm in the plains. What little wind there was came from the east. Heavy rain with high wind accompanied by thunder and lightning took place on the 21st August. After this only three admissions took place among sepoys and followers."

V. Local conditions.—The *drainage* is reported to be good. "The *water-supply* is from a canal which in the rains is liable to receive the surface drainage from the ground above it, and impurities from cattle. It is generally very full in the rains and runs at a rapid rate." There are two canal streams at Deyrah, which issue from the hills at a distance of nearly 4 miles from one another and run in altogether independent courses, never approaching each other nearer than one mile's distance apart. The one supplies the cantonments and the other the city. Both of them run very rapidly. In the cantonment there are no wells and in the town only three, of which one has fallen into disuse, one supplies the prisoners only, and the third is little, if at all, drawn on. The men had ample space.

VI. Preventive measures.—Movement.—Affected buildings were at once vacated, and the inmates placed in tents. No case occurred among them after removal.

VII. Previous History.—In 1869 the troops and prisoners at Deyrah escaped, but in the great epidemics of 1845, 1856, and 1861, they suffered more than in 1872.

Statement of Cholera at Deyrah, 1836-72.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1836	Prisoners ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1838	Ditto ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
1840	Ditto ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1845	Native Troops ...	1,049	...	...	...	...	1	1	...	...	1	4	5	...	12	10
	Prisoners ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1850	Native Troops ...	1,320	...	...	...	...	...	1	2	1	...	...	...	...	4	1
1852	Ditto ...	564	...	...	...	...	...	...	41	16	1	...	...	...	58	33
	Prisoners ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
1855	Native Troops ...	...	...	...	...	1	...	2	...	...	...	...	...	...	3	...
1856	Ditto ...	755	...	...	...	...	...	...	...	32	...	...	...	...	32	23
	Prisoners ...	39	...	...	...	...	...	...	...	1	...	1	...	...	2	1
1858	Native Troops ...	...	...	...	...	...	...	...	2	...	1	...	...	...	3	1
1861	Ditto ...	750	...	...	2	1	...	...	...	18	6	1	...	...	28	7
	Prisoners ...	66	...	...	...	...	...	...	...	13	1	1	...	...	15	6
1862	Native Troops ...	752	..	...	...	...	3	...	...	...	...	...	..	...	3	3
1865	Ditto ...	100	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1867	Prisoners ...	41	...	...	...	4	8	...	...	...	...	...	...	...	12	2
1872	Native Troops ...	415	...	...	..	...	...	...	1	8	...	...	1	...	10	10
	Prisoners ...	58	...	...	...	...	...	...	2	1	2	...	...	...	5	1

Roorkee.

ROORKEE lies nearly due north of Meerut. The garrison of the cantonment consisted of the head-quarters and wing of the 109th Foot, the head-quarters and six companies of Sappers and Miners and the 41st Company, Royal Engineers. The non-military portion of the population is returned as 1,128. The town of Roorkee, which is adjacent, has 7,000 inhabitants. The district of Seharunpore, in which Roorkee is situate, has an area of 2,227 square miles, and a population of 880,663.

II. Details of the outbreak.—In the district deaths from cholera were reported in every month of the year. In August they reached a maximum of 694. In September they were 366. The total for the year was 1,351. At the annual fair at Hurdwar, which lies in this district, one or two suspicious cases were seen. Dr. Garden, the Civil Surgeon, states: "During the recent fair two natives of Jummoo were attacked with diarrhœa or mild cholera, and one died in 20 hours from collapse, though he had passed but two yellow stools and vomited only five or six times. I should have thought but little of these cases had not a body been sent in to this station by the police for examination. This was done in my absence by the Sub-Assistant Surgeon, and from his description the contents of the intestines were choleraic. He and his companion were both natives of Jummoo, and had been taken ill at the same time with similar symptoms. The second man is now nearly well. The rest of the party deserted them on the 12th and made their way out of the district as fast as possible.

Notes on outbreaks, Roorkee.

Up to the present time I have had no grounds for supposing that cholera existed in this district, and certainly no cases have occurred amongst the other pilgrims." In the vicinity of Roorkee the first cases reported were at Jelalpore Dada on the 25th June, when 29 cases and 20 deaths were said to have occurred in one day. On the 5th August the disease was known to be at Nuseerpore Afzulpore, 9 miles off, but the surrounding neighbourhood seems to have kept clear until the 15th August, when it broke out at Bailra very virulently. Up to the 26th eight villages had been attacked. On that day there were three in the town of Roorkee. In 60 places, nearly all within 12 miles of Roorkee, which suffered from cholera, and of which the population was 78,619, there were 777 cases and 323 deaths. Dr. Planck, the Sanitary Commissioner of the North-Western Provinces, who enquired into the circumstances at my request, states that "many more villages with a much larger total population equally near to Roorkee, never suffered at all."

No. 31, 109th Regiment.

In the 109*th Regiment* (Surgeon Major R. Thornton, from whose report many of the above particulars are taken) there were seven cases, of which three were fatal. The first was on the 2nd September, a man in hospital was attacked. "On the previous day there had been a great accession of disease in the villages around the cantonment. From four cases on the 31st August to 18 on the 1st September, and on the 2nd there were ten cases exclusive of the European." On the 4th another man in hospital who had been in the same ward with the first case. On the 8th a third also in hospital, and had been under treatment since June. On the same day a Private in the barracks and a woman from the married quarters. On the 9th another woman was attacked, and on the 16th one of the men.

No. 32, Sappers and Miners.

Among the *Sappers and Miners* (Surgeon A. Eteson) there were four attacks between the 16th and 21st September, two of which were fatal. These cases are tabulated in the following statement, in which all those known to have occurred in the town are also entered. Side by side with them, it may be well to place the weekly admissions from fever and diarrhœa. Fevers were not prevalent. In the week ending the 26th July the medical officer of the 109th remarks—"Several men have come to hospital this week, complaining of colic and diarrhœa, which is apparently attributable to the filters in the barrack room not being kept clean." In the week ending 30th August there were two fatal cases of diarrhœa. The return for the week ending 25th October shows two deaths from "remittent fever." They were in hospital with ague, "were both attacked at the same time, and after being relieved from the collapse stage, appeared much better and passed a tolerable night until 4 A.M., when they asked for a drink. On receiving it they lay down again; Stedman died immediately, and Jones two minutes after." The admissions into hospital on account of fevers and diarrhœa among the troops at Roorkee are given in the following statement, in which the dates of the cases of cholera also are entered.

Statement of Cholera at Roorkee in 1872.

	Town of Roorkee.	Cantonment Bazaars, &c.†	109th Regiment.	Sappers and Miners.	ADMISSIONS INTO HOSPITAL FROM			
					FEVERS.		DIARRHŒA.	
					109th Regiment. Strength 501‡	Sappers and Miners. Strength 728.	109th Regiment.	Sappers and Miners.
26th July ...	* ...	...	...	...	4	2	2	...
2nd Augt...	* ...	...	...	...	3	6	2	...
9th " ...	* ...	...	...	...	2	9	2	...
16th " ...	* ...	...	...	...	1	5	2	...
23rd " ...	* ...	...	...	...	2	15	...	1
26th " ...	3	...	...	...	...	...	...	...
27th " ...	4	...	...	...	...	...	...	...
28th " ...	1	...	...	...	...	...	...	...
29th " ...	1	...	...	...	...	...	...	...
30th " ...	...	...	...	...	7	4	1	1
31st " ...	...	...	...	...	...	...	...	...
1st Sept....	...	...	...	...	...	...	...	...
2nd " ...	1	...	1	...	...	...	...	...
3rd " ...	...	...	...	...	...	...	...	...
4th " ...	...	...	1	...	...	...	...	...
5th " ...	...	...	...	...	...	...	...	...
6th " ...	...	...	...	...	4	4	2	...
7th " ...	2	...	...	...	...	...	...	...
8th " ...	2	...	3	...	...	...	...	...
9th " ...	3	...	1	...	...	...	...	...

* Week ending. † No deaths recorded ‡ Including women and children.

Notes on outbreaks, Roorkee.

Statement of Cholera at Roorkee in 1872—continued.

	Town of Roorkee.	Cantonment Bazaars, &c.*	109th Regiment.	Sappers and Miners.	ADMISSIONS INTO HOSPITAL FROM			
					FEVERS.		DIARRHŒA.	
					109th Regiment. Strength 501†.	Sappers and Miners. Strength 728.	109th Regiment.	Sappers and Miners.
Sept. 10th ...	2	...	...	...	...	..	...	...
„ 11th ...	2	...	...	...	...	...	...	...
„ 12th ...	3	...	...	...	...	...	...	...
„ 13th ...	...	...	...	...	3	12	3	...
„ 14th ...	...	...	...	...	...	...	...	...
„ 15th ...	...	...	...	...	...	...	...	...
„ 16th ...	1	...	1	1	...	...	...	...
„ 17th ...	1	..	...	...	...	...	...	...
„ 18th ...	3	...	...	...	...	...	...	...
„ 19th ...	4	...	...	...	...	...	...	...
„ 20th ...	..	...	...	2	9	11	2	...
„ 21st ...	5	...	..	1	...	...	...	..
„ 22nd ...	2	...	...	...	...	...	...	...
„ 23rd ...	1	...	...	...	...	...	...	...
„ 24th ...	2	...	...	...	...	...	...	...
„ 25th ...	2	...	...	...	...	...	.	...
„ 26th ...	2	..	...	...	...	...	...	...
„ 27th ...	...	...	...	...	12	9	1	...

* No deaths recorded. † Including women and children.

III. Importation and communication.—Dr. Thornton states—"The first case at Bailra was clearly traced to an inhabitant who had been at Deyrah where there was cholera. He returned on the morning of the 15th August and died the same day. The other cases occurred immediately afterwards." The first European attacked "had not been outside the cantonment for a considerable time and was in hospital at the time of attack." None of the attendants on the sick in 109th are entered as having been attacked. "The introduction of the disease among the Sappers," writes Surgeon A. Eteson, "is supposed by Dr. Dickson, who was then in medical charge, to be due to the men having visited the town where cases had already occurred." None of the attendants suffered. In no instance was there reason to believe that a person sick of cholera spread the disease.

IV. Meteorology.—Dr. Eteson observes—"Dr. Murray Thomson, Meteorological Reporter for the North-Western Provinces, has stated that the meteorological character of the year generally was normal. The rain-fall was not excessive, and the monsoon was neither delayed in its arrival nor curtailed in duration."

V. Local conditions.—The *drainage* is reported to be very imperfect. In his remarks appended to the return for the week ending 9th August, the medical officer states—"The drainage around the barracks is most defective. Nothing has been done to clear existing water-courses or to make new. The men in passing from room to room to-day, at the time of medical inspection, had to wade through water, almost up to their knees." The *water* is drawn from wells and is of excellent quality.

VI. Preventive measures—Quarantine.—On the 17th August it was determined to establish a quarantine round Roorkee. This was carried out by 16 chowkedars being placed on the bridges and roads. The town was not included. But people on urgent business passed in and out, and the necessaries of life were supplied from outside. On the 18th, the people having forced the chowkedars and beaten some of them, while some of the chowkedars were convicted of taking bribes, the cordon was strengthened by a line of sentries of the Sappers and Miners. This rendered the quarantine more effective. This arrangement was continued till the 12th September, when, in consequence of orders from the general commanding, the military sentries were withdrawn, three days before they could be replaced by policemen. It could not be re-established till the 16th. "The consequence was," writes Dr. Thornton "that some of the Sappers went beyond bounds, and the result was three cases among the Sappers and Miners." *Movement.*—When a case occurred the affected quarter was immediately vacated, and the inmates placed in tents in cantonment.

VII. Previous History.—From 1856 to 1871 the cases of cholera have been singularly few. In no year did they exceed two. The outbreak of 1872 was much more severe than that of any previous one.

Notes on outbreaks, Roorkee.

Statement of Cholera at Roorkee, 1856 *to* 1872.

Years.		Average Strength.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Cases.	Total Deaths.
			Number of Cases.													
1856	Native Troops	587	...	...	...	...	...	...	...	1	...	...	...	...	1	...
1857	European "	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2*
1858	Native "	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
1861	European "	588	...	...	...	...	...	...	...	1	...	...	...	...	1	1
1864	Native "	895	...	...	...	2	...	...	...	...	...	...	...	...	2	...
1867	" "	809	...	...	...	2	...	...	...	...	...	...	...	...	2	1
1872	European "	521	...	...	...	...	...	...	...	...	7	...	...	...	7	3
	Native "	732	...	...	...	...	...	...	...	...	4	...	...	...	4	2

* Deaths only recorded.

Meerut.

MEERUT.—The station of Meerut lies to the east and slightly to the north of Delhi. At the time cholera appeared among the troops the garrison consisted of four batteries of artillery, 2 European and 2 Native Regiments. The non-military population of the cantonment is returned as 35,194. In the city, which is about a mile distant, there are 51,000 inhabitants. The district contains an area of 2,361 square miles, and a population of 1,271,454.

II. Details of the outbreak.—On the 12th April one of the men of the Peshawur Mountain Battery, returning from Looshai Expedition to Abbottabad, was attacked at Meerut with symptoms of cholera. The medical officer is not certain that the case was one of cholera, but it was very suspicious; the patient recovered. On the 17th May there was a death among the native non-military population of cantonment which is returned as having been due to cholera, with the remark that it was of a doubtful nature. The first undoubted case occurred in a native living in one of the cantonment bazaars on the 14th August. On that date there were two cases, but none others are known of till the 24th. In the meantime on the 21st August, the first European soldier was attacked. The number of cases and deaths among officers, men, women, and children of each corps was as follows:—

Corps.	Strength.				Admissions.				Deaths.			
	Officers.	Men.	Women.	Children.	Officers.	Men.	Women.	Children.	Officers.	Men.	Women.	Children.
Head Quarters, 19th Brigade, Royal Artillery ...	6	5	4	7	...	...	...	...	...	...	...	...
D-D., Royal Horse Artillery	4	144	14	26	...	9	1	...	...	7	1	..
E-F., Royal Horse Artillery	4	144	16	23	1	13	...	...	1	7	...	..
F-16th, Royal Artillery ...	2	138	15	35	1	...	1	2	...	...	1	2
D-19th, Royal Artillery ...	3	125	17	24	...	7	...	1	...	5	..	1
4th Queen's Hussars ...	12	423	58	89	..	4	1	...	...	4	1	..
105th Light Infantry ...	13	460	...	...	1	33	4	7	1	24	3	7
8th Bengal Cavalry ...	3	256	...	...	...	1	...	...	...	...	...	...
3rd Regiment, Native Infantry	6	575	...	...	...	1	...	...	...	...	...	...

No. 33, Royal Artillery.
No. 34, 4th Hussars.
No. 35, 105th Light Infantry.
No. 36, 8th Bengal Cavalry.
No. 37, 3rd Native Infantry.

The daily incidence of the disease in the different corps of the garrison, in the cantonment bazaars and in the city is contrasted in the annexed statement. There is reason to believe that the cases among the non-military native population is much under-stated. On this point Major General Travers remarks—"The sickness and mortality amongst the natives was very great, and whilst the majority of the population were suffering from fever, and numbers died from that cause, it would appear that the police cannot have succeeded in ascertaining the real number of cases of cholera especially in the bazaars. The difficulties, however, with which they have to contend in this respect, more especially in such large and populous bazaars as those at Meerut are very great, owing to the aversion of the natives to reporting any disease which they know may possibly entail still more stringent sanitary measures." In the absence of a nominal roll of cases for the 105th Light Infantry, the details of the dates have been taken so far as they are given in the report of the military authorities. In all the lines of the European force the disease is described as having been most erratic in its course, and spread over many buildings. F-16th, the men of which escaped, occupied the Rocket Troop Lines, and *Assistant*

Surgeon Berkeley states that the battery of which he had charge at Meerut in 1869 and which was quartered in these same lines escaped in a like remarkable manner.

Notes on outbreaks, Meerut.

Cholera at Meerut in 1872.

Dates.	City.	Canton-ment Bazaars.	Royal Artil-lery.	4th Hus-sars.	105th Re-giment.	8th Bengal Cavalry.	3rd Native Infantry.	Daily Total in Canton-ments.	Central Prison.
August 14 ...	...	1	...	...	...	...	...	1	...
„ 15 ...	...	...	...	...	...	...	...	...	...
„ 16 ...	...	...	...	...	...	...	...	...	...
„ 17 ...	...	...	...	...	...	...	...	...	...
„ 18 ...	...	...	...	...	...	...	...	...	...
„ 19 ...	...	...	...	...	...	...	...	...	...
„ 20 ...	...	...	...	...	...	...	...	...	...
„ 21 ...	...	...	1	...	1	...	...	2	...
„ 22 ...	...	...	...	...	...	...	...	...	...
„ 23 ...	...	...	...	...	2	...	...	2	...
„ 24 ...	...	3	...	...	1	...	...	4	...
„ 25 ...	3	1	...	...	1	...	...	2	...
„ 26 ...	3	3	...	2	1	...	...	6	...
„ 27 ...	8	5	...	...	...	...	...	5	...
„ 28 ...	4	...	...	...	1	...	1	2	...
„ 29 ...	13	3	1	...	2	...	...	6	...
„ 30 ...	10	...	...	...	1	...	...	1	...
„ 31 ...		...	1	1	...	...	...	2	...
Sept. 1 ...	16	2	2	...	5	...	...	9	...
„ 2 ...	8	...	1	...	4	...	...	5	2
„ 3 ...	24	1	3	...	7	...	...	11	...
„ 4 ...	9	2	...	...	2	...	...	4	...
„ 5 ...	12	3	...	...	1	...	...	4	1
„ 6 ...	14	2	...	...	2	...	...	4	2
„ 7 ...	15	2	6	...	2	...	...	10	...
„ 8 ...	16	...	5	...	...	...	...	5	2
„ 9 ..	15	1	...	...	2	1	...	4	4
„ 10 ...	23	3	1	...	1	...	...	5	...
„ 11 ...	12	...	3	...	1	...	...	4	...
„ 12 ...	8	...	2	...	...	...	...	2	...
„ 13 ...	10	1	1	...	...	...	...	2	...
„ 14 ...	6	...	1	...	...	...	...	1	1
„ 15 ...	1	2	2	...	1	...	...	5	...
„ 16 ...	3	...	1	...	...	...	...	1	...
„ 17 ...	4	1	...	2	...	...	...	3	...
„ 18 ...	2	1	3	...	...	...	...	4	1
„ 19 ...	3	1	...	...	2	...	...	3	1
„ 20 ...	4	3	...	...	2	...	...	5	1
„ 21 ...	3	1	...	...	...	...	...	1	2
„ 22 ...	2	...	...	...	...	...	...	...	...
„ 23 ...	2	1	1	...	1	...	...	3	1
„ 24 ...	2	...	...	...	...	...	...	...	1
„ 25 ...	2	...	...	...	1	...	...	1	...
„ 26 ...	3	...	1	...	1	...	...	2	...
„ 27 ...	...	1	...	...	...	...	...	1	1
„ 28 ...	...	...	...	...	...	...	...	...	...
„ 29 ...	2	1	...	...	...	...	...	1	...
„ 30 ...	...	...	...	...	...	...	...	...	...
October 1 ...	...	1	...	...	...	...	...	1	...
„ 2 ...	...	...	...	...	...	...	...	...	...
„ 3 ...	...	...	...	...	...	...	...	...	...
„ 4 ...	...	...	...	...	...	...	...	...	...
„ 5 ...	...	...	...	...	...	...	...	...	...
„ 6 ...	...	...	...	...	...	...	...	...	...
„ 7 ...	...	...	...	...	...	...	...	...	...
„ 8 ...	...	...	...	...	...	...	...	...	...
„ 9 ...	...	...	...	...	...	...	...	...	...
„ 10 ...	...	...	...	...	...	...	...	...	...
„ 11 ...	...	...	...	...	...	...	...	...	...

Notes on outbreaks, Meerut.

The prevalence of fever and diarrhœa, so far as this can be judged of by the admissions into hospital, is shown in the following statements:—

Admissions into Hospital from "Fevers."

	D-D, Royal Horse Artillery.	E-F Royal Horse Artillery.	F-16th Royal Artillery.	D-19th Royal Artillery.	4th Hussars.	105th Light Infantry.	8th Bengal Cavalry.	3rd Native Infantry.
Week ending 5th July ...	...	2	3	5	...	4	2	3
„ 12th „ ...	...	1	1	2	...	4	2	4
„ 19th „ ...	...	1	...	3	1	6	...	3
„ 26th „ ...	3	2	6	2	3	9	4	12
„ 2nd August ...	1	2	5	2	2	8	5	23
„ 9th „ ...	1	3	5	3	8	8	8	18
„ 16th „ ...	2	10	5	4	8	14	5	26
„ 23rd „ ...	12	5	8	3	4	25	19	11
„ 30th „ ...	13	15	16	13	12	22	18	40
„ 6th September ...	6	8	9	5	5	7	18	25
„ 13th „ ...	3	9	11	9	5	12	11	13
„ 20th „ ...	3	2	...	...	4	6	14	163
„ 27th „ ...	3	4	4	...	11	8	12	35
„ 4th October ...	5	1	3	1	2	16	2	10
„ 11th „ ...	8	4	5	8	...	36	5	32
„ 18th „ ...	5	9	4	8	4	27	4	7
„ 25th „ ...	2	6	8	6	1	7	...	17
„ 1st November ...	...	6	6	2	2	14	8	7

Admissions into Hospital from "Diarrhœa."

	D-D. Royal Horse Artillery.	E-F. Royal Horse Artillery.	F-16th Royal Artillery.	D-19th Royal Artillery.	4th Hussars.	105th Light Infantry.	8th Bengal Cavalry.	3rd Native Infantry.
Week ending 5th July ...	...	...	...	...	...	1	...	...
„ 12th „ ...	...	1	...	...	...	...	...	...
„ 19th „ ...	...	...	...	...	...	...	...	1
„ 26th „ ...	...	...	...	...	3	2	...	...
„ 2nd August ...	...	1	...	1	...	1	...	...
„ 9th „ ...	...	...	...	...	...	...	...	...
„ 16th „ ...	...	...	1	1	...	5	...	...
„ 23rd „ ...	1	...	...	1	2	2	...	...
„ 30th „ ...	5	2	3	...	...	8	...	...
„ 6th September ...	5	3	1	4	2	2	...	...
„ 13th „ ...	6	3	1	2	...	1	...	...
„ 20th „ ...	1	3	...	...	1	...	...	...
„ 27th „ ...	...	...	1	...	1	1	...	...
„ 4th October ...	1	...	...	...	...	...	...	...
„ 11th „ ...	1	...	...	2	2	5	...	...
„ 18th „ ...	...	2	...	...	...	1	...	...
„ 25th „ ...	3	...	...	1	...	4	...	...
„ 1st November ...	...	2	1	...	...*	3	...	...

* There were besides 21 admissions from "Dysentery" in these weeks in the 4th Hussars.

Almost simultaneously with the cholera, dengue reached Meerut. What with fever and dengue, hardly a man was fit for duty, and almost every officer was sick.

In the district although a few deaths from cholera were registered in the early months of the year, no authentic case came to notice till the 23rd May. On that date eight cases and four deaths were reported in the north-west corner in the Barote mortuary circle, and there was a total of 26 deaths in that month. In the month of June there was slight prevalence in the west, chiefly near the Eastern Jumna Canal. The total deaths throughout the district in that month were 88. In July the disease almost entirely disappeared. Only thirteen deaths from it were reported from the whole district. Up to the 18th August only five deaths were reported in that month, when Sirdhana, with a population of 13,072, a town about 11 miles north of Meerut, was attacked. The total deaths from cholera for the district in August were 127. In September there were 222 deaths in the district spread over many different places widely distant from one another. The cases were few in any one place except in Sirdhana and Meerut. In the villages lying between these two places there were no deaths. The half of the district lying to the east of Meerut city escaped entirely until the 20th September, when five deaths from cholera took place in the south-east corner. In October there were nineteen deaths in the district. These also were widely distributed. The total deaths from cholera in the Meerut district were 510.

Notes on outbreaks, Meerut.

In the station Dr. W. Moir, the Civil Surgeon, attended ten cases among the *civil European residents*, a considerable population. In several of them the use of sulphate of magnesia seemed to induce an attack.

III. Importation and communication.—There is no history of importation by pilgrims or of spread by communication. Along the course of the Trunk road and line of rail there is no history of cholera.

In the artillery the man first attacked "had not been to the bazaar or out in the district, and the occurrence of the case could not be accounted for in any way," nor could importation be traced in any other sections of the community. One coolie and a water carrier in the artillery died after attending cholera patients, but the dates of these attacks are not given, nor is the time during which they came in contact with the sick specified. In the 4th Hussars (Surgeon C. M. Jessop) none of the attendants were attacked. "A man had been detained in hospital at 5-30 P.M. of the 17th September, being apparently much better, he was allowed to go home to attend on his wife who was sick. He returned at 8-30 with cramp and vomiting, and died nine hours later. His wife sick with similar symptoms was admitted ten hours after his death, and died within twelve hours. These two cases came from the married quarters and arose, it is imagined, from infection by a punkah coolie who, with vomiting and purging, left and died in the bazaar." In the 105th Light Infantry (Surgeon W. Howard) none of the attendants suffered. "In many instances soldiers were allowed to attend to their wives and children, but in no instance was there a suspicion of disease being spread by contract." With regard to the disease Dr. Howard further observes: "The character of the disease was peculiar, inasmuch as it was apparently caused by malaria, and was so associated with fever, that in some cases it was difficult to say where one commenced and the other ended. In nearly all cases it more resembled an algid form of malarial fever than cholera. To take a typical case: a man is admitted with ague, he has had it every day at the same hour several days in succession, he is shivering, has pain in his whole body, thirst, and great prostration, skin shrivelled, finger nails livid, countenance anxious, pulse small, after admission to hospital in some cases, in others before, purging and vomiting occur, and he at once goes into collapse."

IV. Meteorology.—Dr. Berkeley observes: "there was almost constant rain, but not heavy, the rainfall during August being 6·53 inches, and in September 6·35. There was, as a rule, a very stagnant atmosphere during the epidemic. There were no means of ascertaining the exact direction of the wind. South-west winds certainly prevailed. Fogs were prevalent, and there was a marked absence of electric phenomena." Dr. Howard remarks: "one fact on all occasions asserted itself, that on a fine day and with a west wind cholera decreased, and an east wind with heavy clouds and rain with or without thunder produced an increase, so much so that one could calculate almost the amount of disease that would result." The General Commanding the division in his report states that "up to September 1st the weather had not actually interfered with the movements into camp, but shortly before 5 A.M., on the 1st, heavy rain commenced to fall and continued for four hours." "During the morning of the 2nd heavy rain again fell. On the 3rd there was another heavy storm of rain and wind, and heavy rain again fell in the evening. On the morning of the 19th a heavy storm occurred, which apparently produced an increase amongst the troops as well as the natives."

V. Local conditions.—*Drainage* is decidedly imperfect. The *water* is drawn from wells which are numerous. The attacks could in no instance be traced to the use of any particular water. There was no *overcrowding*.

VI. Preventive measures.—*Quarantine* was not attempted. As cases occurred the rooms or buildings were vacated, and the inmates, as a rule, first accommodated in tents on the parade grounds. If more cases appeared they were transferred to camp outside. The more decided movements were not always made so promptly as could be desired, but the almost universal sickness among all classes, both fever and dengue, as well as the want of sufficient medical officers, were great difficulties. A small portion of the 105th Light Infantry first left cantonments on the 24th August and encamped on the sand hills by the side of the Bijnore road, about two miles from the barracks. Others joined on the 29th and 30th. On the 1st September there were five cases in this camp, and although partial movement was made in the vicinity, three more followed on the 2nd and five more on the 3rd. On the 4th the detachment divided, 100 moved on four miles further on the Bijnore road to Sainie, and the rest to a place five miles on the Gurmucktesur road. In the artillery no decided movement was made till the 8th of September when D-D moved into camp five miles on the Allyghur road. On the 12th E-F Royal Horse Artillery encamped seven miles on this same road. In the artillery all the cases except four occurred in the cantonment. From the 21st August to the 31st the seventeen cases among the troops, all occurred either in buildings or tents within cantonments.

Notes on outbreaks, Meerut.

Meerut Central Prison—Surgeon W. Moir, M.B., Civil Surgeon—about one mile from the cantonment. Strength 809 prisoners. After being very healthy this jail for some years back has been in a most unsatisfactory state, and the sickness and mortality have been very heavy. In 1871 the death-rate was 154 per 1,000.

II. Details of the outbreak.—The first case of cholera occurred on 2nd September among the families of the European and Eurasian Warders who occupy a block of buildings about 100 yards distant from the main gate. Two other of the inmates of this building were attacked at or about the same hour. On the 5th September a prisoner in hospital was seized. On the 6th there were two cases in hospital. On the 8th one in hospital and one in a cook house. On the 9th four, of which three were patients in hospital and one a woman in the women's barracks. Dropping cases continued till the 27th. Out of about 30 buildings eight were attacked in different parts of the jail. In the hospital building there were seven, but of the others, all but five occurred among prisoners who were under treatment for some other ailment in another building which was set apart as a hospital when the proper hospital was first affected. Between the 5th and 27th September there were altogether eighteen cases among the prisoners, of which nine proved fatal. Among the officials besides the cases already mentioned only one other occurred, a child of the compounder who was attached to the special cholera hospital.

III. Importation and communication.—Neither the cases among the warders' families nor the first case within the jail could be traced to importation. When the warders' quarters were attacked, all communication was stopped between them and the interior of the jail. During the course of the outbreak no cases could be ascribed to intercourse with the sick. The only instance at all favoring this idea was that of the compounder's child already noted, who may have been brought in contact with the cholera patients either directly or indirectly, but of this there is no proof, and the father had strict orders not to leave the cholera hospital.

IV. Meteorology.—The first cases on the 2nd September are said to have occurred coincident with a strong east wind.

V. Local conditions.—As has been already stated, the prisoners have for some years been in a low state of health; the same remark applies to great part of the district in which the water level has risen very considerably wherever, as is the case near Meerut, the canal has extended. The *drainage* of the jail is reported to be most defective. The *water* drawn from wells is excellent. There was not the least *overcrowding* in any quarter, for the strength was little over one-half of the full complement.

VI. Preventive measures.—*Quarantine* had been kept up as far as possible, and there had been no fresh admission into the jail for 15 days before the outbreak. *Movement.*—In consequence of the difficulty of providing a guard, the hospital was not abandoned till the 11th September—six days after the first case appeared, and when in all seven cases had occurred in that building. The inmates were on that day removed to tents on the ground in front, and not a single fresh case occurred among them. On the 27th September, when the hospital floor was being dug up by a gang of other prisoners, one of them was seized with cholera and died. The women's barracks were also vacated, and no other cases occurred.

VII. Previous History.—In former years cholera was a more regular visitor at Meerut than it has been of late. In the great outbreaks of 1845 and 1867 the disease prevailed chiefly in August and September as it did in 1872. In those of 1856 and 1861 it prevailed in July and August.

Cholera at Meerut, 1826 *to* 1872.

Years, &c.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1826	European Troops	2,002	...	...	...	...		2	2	1	...	...	...	6	11	1
	Native „	16,000*	...	...	...	...	3	...	4	1	...	5	13	9	35	8
1827	European Troops	1,892	1	...	...	...	...	2	7	6	1	4	...	1	22	5
	Native „	16,185*	...	...	...	2	17	37	16	39	11	2	2	1	127	43
1828	European Troops	1,929	1	...	...	1	2	6	2	5		...	2	...	19	5
	Native „	15,788*	...	...	3	3	12	19	4	1	2	1	...	1	46	19
1829	European Troops	1,823	...	...	...	2	...	1	2	1	...	...	...	...	6	2
	Native „	...	2	...	2	3	1	3	1	1	1	...	...	1	15	3
1830	European Troops	1,940	...	...	5	3	1	...	1	12	3	...	..	3	28	4
	Native „	12,868*	...	...	6	3	3	1	1	2	3	...	2	...	21	5
1831	European Troops	1,889	...	..	...	...	...	3	3	2	1	1	2	..	12	1
	Native „	10,914*	3	...	1	6	4	...	2	...	2	...	...	..	18	5
1832	European Troops	1,711	...	..	...	..	...	1	22	1	...	...	...	..	24	1
	Native „	11,132*	...	1	2	5	7	2	3	4	...	1	2	..	27	3
1833	European Troops	1,848	...	..	...	10	1	...	...	3	1	8	...	2	25	2
	Native „	12,931*	...	2	...	9	1	3	...	4	5	...	1	..	25	1

* Strength in the circle.

Notes on outbreaks, Meerut.

Cholera at Meerut, 1826 *to* 1872—continued.

Years, &c.		Average Strength.	Numbers of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1834	European Troops	1,779	...	...	...	...	...	...	...	3	...	9	...	...	12	2
	Native „	13,486*	1	1	...	1	1	...	4	1	4	4	2	2	21	5
1835	European Troops	1,755	...	1	...	14	...	...	...	...	...	...	...	...	15	3
	Native „	13,662*	...	1	1	3	1	3	...	...	1	...	2	...	12	4
1836	European Troops	1,815	1	...	...	3	3	...	...	...	...	...	...	...	7	1
	Native „	13,568*	2	...	3	5	6	5	7	4	1	...	1	..	34	9
1837	European Troops	1,758	1	...	.	1	3	1	1	2	2	...	1	...	12	1
	Native „	13,847*	...	...	...	3	5	5	5	3	3	1	4	1	30	7
	Prisoners	...	...	...	...	...	...	...	...	..	...	...	...	...	.	4
1838	European Troops	1,751	...	...	...	...	...	2	20	10	2	...	...	...	34	15
	Native „	13,526*	1	...	2	6	8	11	21	12	1	1	11	...	74	26
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
1839	European Troops	1,437	...	...	...	1	..	4	1	4	...	...	.	1	11	1
	Native „	13,418*	...	1	7	3	4	5	1	1	4	...	...	...	26	3
1840	European Troops	1,670	...	...	1	...	...	1	1		1	1	...	...	5	...
	Native „	14,882*	...	...	6	3	3	4	...	5	1	...	...	1	23	5
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1841	European Troops	1,758	...	...	1	.	1	1	1	1	1	1	1	..	8	2
	Native „	15,519*	...	...	1	2	14	17	16	6	4	2	2	...*	64	9
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1842	European Troops	1,726	...	...	...	...	...	...	...	...	..	...	...	1	1	...
	Native „	16,328*	...	...	4	...	1	1	2	1	...	2	1	1	13	2
1843	European Troops	2,796	...	1	...	...	...	...	...	...	...	2	...	.	3	...
	Native „	14,786*	...	3	...	...	1	1	...	5	3	...	...	1	14	2
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1844	European Troops	2,304	1	...	...	...	...	.	...	2	...	...	...	..	3	1
	Native „	17,382*	...	...	...	...	2	6	...	1	2	5	...	1	17	5
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1845	European Troops	2,954	...	...	...	2	2	...	2	29	114	4	2	...	155	92
	Native „	8,274	1	...	6	6	2	1	4	1	6	1	3	...	31	10
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
1846	European Troops	2,108	...	...	1	...	...		...	2	...	...	...	...	3	1
	Native „	13,958*	...	...	1	2	...	...	...	...	1	...	...	..	4	1
1847	European Troops	2,847	...	...	...	2	1	1	1	...	...	...	...	...	5	...
	Native „	13,487*	...	...	...	3	4	2	3	1	...	1	...	...	14	...
1848	European Troops	954	.	1	...	...	1	1	2	...	...	...	...	...	5	...
	Native „	12,618*	...	1	3	6	...	1	3	2	1	..	...	...	17	5
1849	European Troops	487	...	...	...	...	...	...	...	...	...	...	4	...	4	1
	Native „	13,657*	...	1	...	8	3	2	2	...	1	1	...	...	18	3
1851	European Troops	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
	Native „	2,257	...		...	...	...	...	...	...	...	...	2	...	2	2
	Prisoners	...	...	...	...	...	...	..	...	...	...	...	...	...	...	1
1852	Native Troops	3,571	...	1	1	4	3	...	...	...	...	...	...		9	...
1853	European „	...	...	...	...	...	...	..	...	1	...	...	...	...	...	1
	Native „	4,194	...	...	...	1	1	...	...	...	...	...	...	...	2	...
1854	European Troops	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
	Native „	...	1	...	1	...	...	...	.	...	...	...	2	...	4	...
1855	Native Troops	...	...	...	...	1	...	2	...	3	...	...	...	...	6	1
1856	European Troops	1,610	...	...	...	...	...	...	6	73	...	...	...	...	79	43
	Native „	2,598	...	...	...	...	1	...	9	8	3	...	...	...	21	11
	Prisoners	941	...	...	...	...	...	...	72	75	...	...	1	...	148	90
1857	European Troops	...	...	...	...	...	...	...	...	4	3	...	...	...	...	7
1858	European Troops	1,528	...	...	...	...	...	...	3	1	...	...	...	...	4	3
	Prisoners	1,005	...	...	...	...	...	...	...	4	1	...	...	...	5	2
1859	European Troops	2,146	...	...	...	...	...	1	...	...	..	...	...	...	1	...
	Native „	12,509*	...	1	...	.	...	...	1	...	...	...	...	...	2	1
1860	European Troops	2,317	...	...	...	...	...	1	1	...	...	...	...	...	2	...
	Native „ (Meerut and Rohilcund).	8,399	...	...	...	1	...	1	1	1	1	...	...	...	5	2
1861	European Troops	2,535	...	...	...	1	1	...	88	27	...	1	...	...	118	87
	Native „	763	...	...	...	...	...	...	4	2	...	...	...	...	6	2
	Prisoners	2,189	3	...	...	...	...	...	32	635	...	...	...	...	670	335
1862	European Troops	2,038	...	...	...	1	...	1	24	26	...	...	...	...	52	32
	Native „	1,103	...	...	...	...	...	...	...	7	...	...	...	...	7	2
1863	Native Troops	482	...	...	...	...	...	...	...	1	...	...	...	...	1	...
1865	European Troops	1,783	...	...	...	...	1	...	...	...	...	1	1	...	3	2
1866	Native Troops, (Meerut and Rohilcund).	4,273	...	...	...	...	...	...	...	...	...	...	...	1	1	...
1867	European Troops	1,579	...	...	...	...	...	...	...	16	106	1	...	...	123	112
1868	European Troops	1,616	...	...	...	1	...	...	...	1	...	...	...	...	2	...
	Prisoners	151	...	...	...	...	...	...	...	1	...	...	...	...	1	...
1869	European Troops	1,916	...	...	...	...	...	...	...	...	16	4	3	...	23	16
1870	European Troops	1,796	...	...	1	...	...	...	...	1	...	...	...	...	2	...
	Native „	804	...	...	...	1	1	...	...	...	...	...	...	...	2	2
1871	Native Troops	890	...	...	...	...	...	...	...	...	...	...	...	1	1	1
1872	European Troops	1,953	...	...	...	...	...	...	...	18	65	...	...	...	83	63
	Native „	857	...	...	...	...	...	...	...	1	1	...	...	...	2	...
	Prisoners	1,[illegible]40	...	...	...	...	...	...	...	...	18	...	...	...	18	10

* Strength in the circle.

DELHI.—Area 1,227 square miles. Population 608,850. Number of villages 772. The city, which lies 34 miles south-west of Meerut, has a population of 111,015.

Notes on outbreaks, No. 39, Delhi.

II. Details of the outbreak.—In the district 1 death from cholera was reported in April; altogether 219 deaths were registered, the distribution of which by months is shown in the general statement for the Punjab. In the city only 5 deaths from cholera were reported,—1 in April, 1 in May, 1 in June, 1 in August, and 1 in September. Among the garrison no cases occurred.

VII. Previous History.—The exemption from cholera which the garrison of Delhi has enjoyed during the last 11 years is remarkable.

Statement of Cholera at Delhi, 1845—1872.

YEARS.	Average Strength.	NUMBER OF CASES.												Total Cases.	Total Deaths.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1845 Native Troops -	3,558	...	1	...	3	1	1	...	...	2	1	5	4	18	10
Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	46
1846 Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1847 Ditto -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1851 Native Troops -	3,043	...	...	...	2	2	...	...	1	...	...	...	...	5	...
1852 Ditto -	1,931	...	...	1	1	2	2	1	...	1	1	...	...	9	...
1853 Ditto -	3,125	...	...	2	...	...	...	1	2	1	1	1	...	8	2
1854 Ditto -	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...
1856 Native Troops -	3,012	...	...	1	1	...	...	...	4	...	...	...	...	6	4
Prisoners -	502	...	...	...	...	...	...	33	6	...	...	...	...	39	18
1857 European Troops (camp) -	...	...	...	...	...	...	49	133	54	119	19	...	...	...	374*
1858 European Troops -	1,411	...	...	...	...	...	...	1	...	11	...	...	...	12	1
Prisoners -	646	...	...	...	...	...	...	...	17	...	...	...	...	17	12
1859 European Troops -	1,400	...	1	1	...	...	...	...	...	1	...	...	...	3	...
1860 Ditto -	1,071	...	...	1	...	...	...	...	1	...	...	...	...	2	1
1861 European Troops -	1,327	...	...	1	1	...	...	81	1	...	...	...	...	84	50
Native „ -	1,028	...	...	1	3	...	1	28	8	...	...	...	...	41	9
Prisoners -	423	...	...	...	...	1	...	30	...	...	...	...	...	31	18
1862 Native Troops -	598	...	...	...	...	1	1	1	...	...	...	...	...	3	1
1866 European Troops -	380	...	...	...	...	...	...	...	...	...	...	...	1	1	...
1867 European Troops -	351	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Native „ -	618	...	...	...	...	...	1	...	...	...	...	...	...	1	1
1868 Native Troops -	694	...	...	...	2	..	...	...	...	...	...	...	...	2	...
1870 European Troops -	402	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Native „ -	664	...	...	...	...	1	...	...	...	...	...	...	...	1	...

* Deaths only recorded.

AGRA.—A station on the right bank of the Jumna, having an elevation of 557 feet. The civil and military portions of it are spread over a large area and interspersed within this area are very many native bazaars. When cholera appeared the strength of the garrison was two batteries of Royal Artillery, 1 regiment of European Infantry, and 2 regiments of Native Infantry. Of these 1 battery and 118 men with their women and children were in the fort, which is about a mile from the military station. The cantonment contains a non-military population consisting of a few European residents and 20,341 natives. In the city and its suburbs which lie close by there are 130,000 inhabitants.

Agra.

II. Details of the outbreak.—The first case is said to have occurred on the 2nd April in the city; on the 14th April a barber in the lines of the 1st Regiment Native Infantry was attacked and died of undoubted cholera. Among the Europeans the first case occurred on the 6th May; 3 children of Her Majesty's *65th Regiment* (Surgeon H. Sherlock), belonging to 2 different families, were all at once attacked in the same barrack, 2 at one end of the building, and 1 at the other. Next day, the 7th, another child was seized in the same barrack. Dropping cases, making a total of 28, continued up to the 12th July, and then there was an interval, so far as the 65th Regiment was concerned, to the 27th August. Between that date and the 8th September more dropping cases occurred, and then one solitary attack took place on the 21st. The cases were confined to no particular part of the lines; 14 different buildings were attacked and 8 escaped. The course of the disease was "most erratic." Altogether the results in this regiment were as follow:—

No. 40, 65th Regiment.

	Strength.	Admissions.	Deaths.
Officers	17	...	...
Men	911	28	18
Women	93	2	2
Children	115	4	3
TOTAL ...		34	23

Notes on outbreaks, Agra.

In addition there were 2 cases which were not recorded. One of these was the father of one of the first children attacked. He was brought to hospital the day after his child was taken ill. In the Royal Artillery in cantonment (Assistant Surgeon C. Godwyn), there were no cases; none among the *Native Troops*, and none in the Fort; nor was there any prevalence of diarrhœa. In the 65th, fever of a mild type was slightly prevalent. In the *cantonment bazaars* there were 29 cases, of which 8 were fatal. Of the total nearly all occurred in the regimental bazaar, within 3 or 4 days, commencing with the 14th June. In the *city* and suburbs, including St. Peter's College, the remarkable outbreak in which will be detailed hereafter, there were—

4 deaths from cholera in April.
4 " in May.
28 " in June.
84 " in July.
70 " in August.
7 " in September.

Of these the largest proportion occurred in the suburbs. In the district, with a population of 1,097,425 and an area of 1,873 square miles, the disease was most widely and irregularly distributed. Thirty villages were attacked, but altogether including the city the deaths throughout numbered only 452. In the village of Tuprah, 2 miles south-west from cantonments, 12 deaths from cholera occurred between the 22nd April and the 1st May. In none of the others was any death reported till the 15th May. Some of these were only a few miles from cantonments, others 40 miles off in the extreme corners of the district. In many of them there were only 1 or 2 deaths from cholera among a population of several thousand people.

III. Importation and communication.—There was not the smallest evidence of importation. Excepting the barber, on the 14th April, the first persons attacked in the cantonment were the 3 European children on the 6th May. None of the servants or camp-followers had then been seized, so far as can be elicited by careful enquiry. Nor in the course of the outbreak, which was spread over so long a period, could the disease be shown to spread from one to another. One man in hospital was attacked in a bed next to the part of the ward where men suffering from severe diarrhœa had been treated, and some of these proved afterwards to be cases of cholera and were then removed elsewhere. An hospital orderly was also attacked. He had for some time been subject to diarrhœa. Of 20 native servants connected with the cholera hospital 1 sweeper was seized. Two out of the 4 servants attached to the native cholera hospital were attacked, and 1 died. On the other hand, for want of proper accommodation at the commencement of the sudden outburst which occurred in the regimental bazaar, 22 out of the total of 29 cases were treated in their own huts. They were attended by their own friends, and in no single case did the disease spread to other members of the family. With regard to the immunity enjoyed by the Royal Artillery, Dr. Godwyn remarks—"In the Field Battery whose lines are jammed into a corner, as it were, and covered on one side by the infected Infantry Regiment and on another by the infected bazaar, from which it is separated only by a row of pensioners' bungalows, not a single case of diarrhœa occurred, neither did any cholera".

IV. Meteorology.—"The temperature during the month of May," writes Dr. Sherlock "was extremely hot and oppressive, the thermometer being as high as 104° in the shade. No rain fell, and a fierce hot wind blew from the south-west. In the beginning of June a few sharp showers of rain fell, the temperature becoming comparatively low. The wind, nearly all through the months of May, June and July, blew from the south-west with a slight variation from the east."

V. Local conditions.—The *drainage* is reported good. The *water* drawn from wells, 70 feet from the surface. Three wells were used for drinking water in the 65th lines; one of the wells has now been fitted with a Warner's pump which works well and supplies ample drinking water for the whole regiment. It is filtered at the well and then delivered through a tap; metal buckets are about to be supplied for distributing it to the barracks. A scheme for bringing water in from the new Agra and Delhi canal has been talked of, but no project yet matured. The *bazaar* of the European Infantry and the Royal Artillery has been allowed to grow into the size of a large village, with a population of 1,300. The location of so many people in such proximity to the lines is extremely objectionable in every way, and the proposed removal of the whole or at least a portion of it is very desirable. *Conservancy.*—The general conservancy of the station is well cared for, but the pits in which the sewage and refuse are deposited are a very great nuisance. The stench which arises from them is abominable, and although not perceptible at any great distance, it must have a prejudicial effect. Trenches should be substituted and the trenched land afterwards cultivated. The pits, with the smell and the flock of vultures sitting by them, should be abolished.

VI. Preventive measures—Quarantine.—No quarantine was attempted. At the fort the detachment of the 65th Regiment was not relieved as usual, so as to prevent communication as much as possible. The native guard however, numbering 31, was relieved daily throughout. Once the cholera hospital was established, all the cases among the bazaar people were taken to it. The persons attacked had no option nor had their friends. *Movement.*—As soon as a case occurred in any part of the European lines, the particular room affected was at once vacated and the inmates placed in tents on the parade ground or removed to other quarters. In these tents only two seizures took place, one 9 hours, and the other 36 hours after removal from an infected

Notes on outbreaks, Agra.

room. On the 17th June 3 companies moved to camp Rambagh on the other side of the Jumna, followed by 2 more on the 18th. One case occurred among them 3 days after going out; the company changed ground and no more cases followed. On the 26th June 2 other companies went to the Taj gardens. On the 2nd July they had 1 case and they moved to the Rambagh. On the 12th July they had 1 case and another on the 15th. Of these 4 cases in camp 2 recovered. Three companies returned on 6th July and the others on the 24th July. The next case occurred in one of these companies after return to cantonments. Of the total of 6 which followed their return, 1 occurred in a room which had furnished a case before and which had meantime been scraped, fumigated, and whitewashed. As these 6 cases occurred, the affected rooms were vacated and no seizures followed in tents. In this second part of the outbreak only 1 building was attacked which had escaped in the first part.

No. 41, District Jail.

District Jail. (Surgeon J. G. Pilcher, Superintendent), 300 prisoners.

II. Details of the outbreak.—One prisoner was attacked on the 3rd September and recovered. Diarrhœa was not prevalent. Among the establishment no cases.

III. Importation and communication.—The prisoner was attended by 3 others who were shut up within night and day in the same barrack; none of them suffered. The attack could not be traced to importation. In *Central Prison*, with 1,200 prisoners, no case among either the convicts or the establishment. None in the *Lunatic Asylum*, with 29 lunatics. In all these institutions there was free communication with the general population.

No. 42, St. Peter's College.

ST. PETER'S COLLEGE. (Surgeon Alex. Christison, M.D.), occupies a piece of ground immediately adjoining the Central Prison and divided from the convent only by a wall. The college consists of one long building, the entire length of which, in the upper story, is devoted to a dormitory, 271 feet long by 22 broad. Below these are other sleeping rooms, class rooms, and refectories. There is besides a small separate bungalow in which a few very young children are housed. The main building of the college is not further than 300 yards from the convent buildings. When the cholera appeared, the strength consisted of 1 rector, 1 priest, 17 lay brothers, 46 boarders, and 130 orphans, or a total of 195. The orphans all slept in the upper story, all the other boys in the lower. In addition there were 27 day-scholars, who came about 8 A.M. and returned to their homes in the evening. They had luncheon sent to them from their own houses, but they drank the same water as that supplied to the other children, and the amount consumed, especially in the hot weather, is large. About 30 native servants are attached to the college, and there is a scattered village of some 200 Native Christians which closely abuts on it.

II. Details of the outbreak.—The first case occurred on the early morning of the 5th July. Three boys were attacked almost simultaneously. By 9 o'clock there had been 6 attacks. They rapidly increased and by midnight amounted to 21 with 6 deaths. On the 6th and 7th further cases were numerous. No record is kept of admissions into hospital, so that the number seized on each day cannot be stated with accuracy. By the 8th there had been 44 cases and 21 deaths. The disease then rapidly declined, and on the 10th the last case occurred. In these 6 days there were altogether 52 cases, of which 29 proved fatal. But in addition several more of the boys who were distributed over the country on the commencement of the epidemic were attacked. Including them, so far as can be ascertained, there were 63 seizures and 34 deaths. The orphans suffered much more severely than the boarders. Of 46 boarders 7 were attacked and 4 died, the ratios being 15·20 and 8·91. Among the 130 orphans there were 56 attacks and 30 deaths, or a proportion of 43·07 of cases and 23·07 of deaths. Only 1 of the day-scholars was attacked—a boy, named P. Kelly, who ceased to be a boarder in April, but attended as a day-scholar and lived with his family close to where the matron and little boys lived. When the outbreak took place this family went to the barrack for European warders at the Central Prison. There, on the 7th July, Kelly became ill and was removed to the Thomason Hospital, where he suffered from cholera and recovered. With this exception, the disease was confined to the resident pupils. Diarrhœa was not prevalent. Shortly before there had been 49 cases of measles among the boys.

Of the staff of the institution not one suffered. Among the native servants, so far as is known, no case appeared.

In the Native Christian village there were 8 deaths from cholera; the first case did not appear till after the disease broke out among the children. In the convent, with as trength of—

180 European sisters,
150 Native „
Some 50 Native servants;

there were only 3 cases, all among the children, and all apparently originating in hospital.—One on the 13th July, a second on the 10th August, and a third on the 15th August. Two were attacked in hospital, and the third had left hospital only 4 days previously.

Notes on outbreaks, Agra.

III. Importation and communication.—There is no evidence to lead to the belief that the first case was due to importation or to communication with an infected quarter; nor during the course of the outbreak could any connection be traced between different cases following one another as the result of contagion. On the night of the 2nd of July and again on the 4th there had been a musical and theatrical entertainment, at which many persons from outside were present. On the first occasion there were no soldiers there except the band, and on the second occasion of 70 soldiers, nearly all were from the fort, where no cases of cholera occurred this year. At these entertainments the boys were kept up till a late hour in a heated and impure atmosphere.

In considering this point of importation the history of the boys who left the college to join their friends is of importance. On the evening of the 4th, before the performance commenced, 1 boy started for Mussoorie; his going had no connection with the outbreak which did not show itself till early on the following morning. On the road this boy was attacked with cholera on the afternoon of the 5th, and died on arrival at Mussoorie on the 8th. Of those who were sent away on the morning of the 6th, a number were received by friends in Agra, and others were despatched to their homes in various and distant parts of the country. Father Symphorien, the resident head of the institution, has been kind enough to furnish me with a list of all the boys who were sent away from St. Peter's on the 6th July on account of the outbreak. Some of them cannot be traced, as their friends have changed their residence, but the following particulars have been ascertained regarding 53 out of the 65 who were sent away on the 6th:—

Place to which sent.	Number of boys sent.	Number attacked.	Number died.
Agra	24	3	2
Mussoorie	2	1	1
Lucknow	1	1	...
Allahabad	10	6	2
Cawnpore	3	1	...
Seetapore	1	...	...
Delhi	1	...	...
Buxar	1	...	...
Jhansie	1	...	...
Goorgaon	1	...	...
Toondla	5	...	...
Shajehanpore	2	...	...
Meerut	1	...	...
TOTAL ...	53	12	5

I have been in communication regarding each of the boys included in this statement, and I find that in not a single instance did a boy import cholera to the place where he was sent, although often received among families where the space available was not over-abundant. In illustration of this the case of the boy Ross may be particularly mentioned. He was, says Dr. Christison, "a petty boarder who lived with the orphans. He died on or about the 10th July in a tent near the house of his father, a Serjeant in the Police Lines at Agra. The father and mother and 9 or 10 brothers and sisters lived in 2 very small rooms. The sick boy was among them for several days and his urgent symptoms had existed for some hours before he was removed to the tent. None of the family suffered." The 2 boys transferred to Mussoorie both left on the 4th before the outbreak showed itself in the college. One of them died of cholera at St. George's College, Mussoorie, on the 8th. He was treated in an isolated building, though at first cholera was not suspected. The other boy mixed with the rest of the school, numbering over 100.

V. Local conditions.—The *drainage* is good so far as the running off of rainfall is concerned, but one drain in particular which runs under a portion of the Native Christian village is liable to contain many impurities. The *water* for the convent is said to be brought from the Hurree Purbit well which is a very favorite well in Agra, and is largely drawn from by all classes of the community of Agra, both European and Native. The water-supply for all the inmates of the college is drawn from a well, about one-third of a mile outside, which is much frequented by natives of adjoining villages. In these, so far as is known, no cholera occurred. From this well the supply was drawn for 6 weeks before the outbreak. The father and lay brothers drank from the same source as the boys. Previously it was taken from another well which is close to the main building and only about 20 yards from the *latrine* used by the boarders. This latrine at the time was on the same very objectionable system as that which was in former years generally followed in the place. Seats were placed over a hole some 70 feet deep close to, if not actually down to, the water-bearing stratum. Into this hole the night soil and urine dropped and there it remained altogether unheeded. This arrangement, which would be condemned under any circumstances, became all the more dangerous when the latrine hole was placed, as in this case, so near a well as has been already stated; however the well had ceased to be used for supplying the boys. Another latrine at the opposite end of the building had been used by the orphans,

Notes on outbreaks, Agra.

but in 1870 it gave place to a system of closets. It was on the same plan, and when the tower surmounting it was knocked down some few weeks ago, preparatory to closing the deep hole, the stench was so overpowering that workmen could hardly be persuaded to approach it. In 1869 when the girls were rather severely attacked by cholera, the boys were drinking the water from the objectionable well and using the same latrine, but they had only one case and that was not fatal. The dormitories were much *overcrowded*. Each boy in the large sleeping room had only about 45 superficial feet of space. The girls who almost entirely escaped were packed quite as close. In their sleeping room, moreover, there were 7 rows of beds between opposite doors, whereas in the boys' room there were only 4 such rows. The rooms both in the college and convent are badly ventilated. The two entertainments of the 2nd and 4th July are believed to have overcited the boys and so predisposed them to the disease. None of the 10 small children living in the separate bungalow, as already explained, were at these entertainments, and yet 4 of them were attacked and 2 died. The institutions are poor, and neither boys or girls have that full allowance of nourishing *food* which growing children require.

VI. Preventive measures—Quarantine.—No quarantine was attempted. Both in respect to the college and convent communication went on as usual. *Movement.*—On the 6th, the day after the outbreak commenced, all the boarders that had friends in Agra and elsewhere were sent away to them. The rest of the boarders and the whole of the orphans were sent out to the Taj gardens, a distance of 3½ miles, on the morning of the 7th. There 3 fresh cases occurred. On the morning of the 8th, they removed to Secundra gardens, 4½ miles from St. Peter's in the opposite direction. There during the 8th, 9th, and 10th, 8 cases occurred, and then the disease altogether disappeared. When the boys moved out to the Taj they took their bedding and food from the college. Throughout the outbreak, both while they were at the Taj and afterwards at Secundra, persons from their old quarters were allowed to come among them; there was no interdiction of communication from the college to them. All cases of cholera that occurred after leaving were sent to the college hospital for treatment. Between the 11th and 15th July the boys who recovered joined the main body in a convalescent state. On the 28th July all returned to the college buildings, and no more cases occurred. In the convent no building was vacated on account of cholera. The hospital, as has been already stated, apparently furnished all 3 cases. They were treated in a room of the main ward. It is said that the people in the village of Secundra and in the Secundra Orphanage suffered from cholera, because it was imported by the St. Peter's College children. In the village, first case occurred on the 20th July. In the orphanage, it broke out on the 21st July. From this date to the 7th August, there were 17 cases, all of which but 2 were eventually fatal. There is no evidence that this outbreak was due to importation beyond the fact that there had been no cholera in the vicinity till some days after the St. Peter's children came. There is no evidence that any communication had taken place.

VII. Previous history.—On this Father Symphorien states—"I have no records on this subject beyond 1858. I hear from reliable sources that the cholera occurred for the first time in the institution in an epidemic form in 1855, when about 12 boys and 7 girls died. There were then about one-third less children than now in both institutions. The next appearance of cholera was in 1860, when 1 lay brother, 15 boys, the nurse of the infants and 8 girls died. It came again in 1861 when 2 boys died; and its fourth appearance was in 1862, when it carried away 4 boys and 4 or 5 persons in the convent, in whose number there were 3 nuns. There has been no cholera amongst the boys with the exception of 1 or 2 cases perhaps between 1862 and 1872. I must, however, mention as a remarkable instance that in 1863, on the 25th March, 3 Christian Brothers arrived at Agra from down-country sick with cholera, the scourge being then raging at Allahabad. One of them died a few hours after arrival, the other recovered, but nearly lost his eyesight. We had an outbreak of cholera in the convent in 1869, when 7 or 8 girls died of it; there was then but one case in the college which did not prove fatal."

The history of the Agra cantonment and of the jail as regards cholera is given in the annexure.

Statement of cholera at Agra, 1826—1872.

Years.	Average strength.	Number of Cases.												Total Cases.	Total Deaths.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1826 Native Troops -	12,000*	...	...	3	2	5	...	...	...	...	...	...	...	10	...
1827 { European Troops -	1,092	1	3	2	1	12	22	1	2	3	1	1	...	49	10
Native „ -	12,938*	...	1	5	2	36	53	23	27	12	4	1	...	164	30
1828 Native Troops -	10,134*	2	...	2	10	9	2	5	3	3	...	...	...	36	4
1829 { European Troops -	1,032	...	...	...	1	...	1	1	1	...	...	...	...	4	...
Native „ -	...	2	...	1	2	1	2	1	2	...	...	1	...	12	3
1830 { European Troops -	1,366	...	...	1	...	...	1	1	1	...	...	...	...	4	...
Native „ -	6,972*	...	...	1	2	4	...	2	...	1	1	2	...	13	3

* Strength in the circle.

Notes on outbreaks, Agra.

Statement of cholera at Agra, 1826—1872—continued.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1831	European Troops	1,298	...	...	...	...	...	...	...	...	1	6	3	1	11	6
	Native „	6,081*	1	1	...	...	...	...	1	...	...	4	4	...	11	4
1832	European Troops	968	...	...	...	1	...	...	...	...	...	...	...	...	1	...
	Native „	6,059*	...	...	...	1	3	2	...	1	...	1	...	1	9	2
1833	European Troops	938	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	Native „	5,352*	...	...	1	...	1	...	...	2	...	...	...	...	4	...
1834	European Troops	913	...	...	...	1	...	...	...	4	4	...	...	...	9	3
	Native „	4,966*	...	...	...	...	...	...	5	12	4	...	2	...	23	9
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
1835	European Troops	983	...	1	...	...	...	...	...	...	...	...	...	...	1	...
	Native „	3,840*	...	3	...	2	3	6	1	3	...	1	...	...	19	...
1836	European Troops	989	...	...	1	1	...	...	...	1	...	1	...	...	4	...
	Native „	4,424*	1	...	...	3	4	1	...	1	2	1	...	1	14	...
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1837	European Troops	1,041	...	...	...	1	...	...	...	...	4	9	2	...	16	10
	Native „	4,297*	...	...	1	...	1	1	4	1	2	7	3	...	20	2
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
1838	European Troops	925	...	...	4	2	3	...	2	...	...	...	...	...	11	6
	Native „	4,471*	1	1	27	41	14	35	4	3	5	1	...	11	143	51
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	71
1839	Native Troops	3,677*	1	...	...	2	...	1	1	1	...	...	3	1	10	1
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
1840	European Troops	981	...	...	1	...	1	...	...	1	2	1	1	3	10	1
	Native „	4,272*	...	1	2	4	3	1	...	2	...	...	...	...	13	4
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1841	European Troops	1,138	...	1	1	...	...	1	...	...	...	...	...	...	3	1
	Native „	8,821*	...	...	...	...	...	6	2	4	...	...	...	...	12	2
1842	Native Troops	4,178*	...	...	...	3	1	...	...	...	...	...	...	...	4	2
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1843	European Troops	1,195	...	...	1	...	...	...	...	142	11	...	...	...	154	55
	Native „	5,148*	...	...	...	...	1	...	...	39	1	1	...	...	42	19
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	30
1844	European Troops	1,089	...	...	...	...	2	...	...	...	...	...	...	...	2	...
	Native „	6,856*	...	...	3	...	2	4	2	...	...	...	...	...	11	1
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
1845	European Troops	1,063	...	...	...	4	6	1	...	1	4	...	...	...	16	4
	Native „	4,805	...	...	5	11	4	1	...	...	...	1	...	...	22	5
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
1846	Native Troops	3,582*	...	...	...	1	1	1	2	...	1	...	...	...	6	1
1847	European Troops	1,047	...	...	...	4	1	10	6	1	1	...	...	...	23	2
	Native „	3,471*	...	...	...	...	1	1	...	...	1	...	...	...	3	...
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1848	European Troops	1,269	...	...	...	...	...	1	...	1	2	3	...	1	8	4
	Native „	3,798*	...	...	1	1	...	1	...	2	...	...	...	...	5	...
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
1849	European Troops	498	...	...	...	...	...	...	2	2	...	1	...	...	5	2
	Native „	3,980*	...	...	...	...	...	...	...	2	...	3	1	...	6	1
1850	Native Troops	3,325	...	...	...	1	...	1	...	2	1	...	2	...	7	1
1851	European Troops	...	...	...	...	...	...	...	...	6	2	...	...	...	...	8†
	Native „	3,118	...	...	...	...	...	...	...	1	...	...	...	...	1	1
	Prisoners	...	...	...	...	...	...	...	...	...	...	...	...	...	...	67
1852	Native Troops	2,040	...	...	...	...	1	...	...	...	...	...	...	...	1	1
1854	Native Troops	7,652	2	...	3	7	...	...	...	...	...	...	...	...	12	1
	Prisoners	3,521	...	...	...	...	...	...	5	1	2	...	...	...	8	1
1855	Native Troops	7,788	...	...	...	2	2	...	1	...	...	...	...	...	5	...
1856	European Troops	924	...	...	...	...	...	160	45	1	...	...	...	...	206	98
	Native „	2,897	...	...	1	1	1	38	53	...	...	...	...	...	94	34
	Prisoners	3,632	...	1	2	...	3	442	132	...	...	...	2	...	582	234
1857	European Troops	...	...	...	...	...	...	2	1	2	...	...	...	...	...	5†
	Prisoners	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
1858	European Troops	883	...	...	...	...	...	1	...	2	5	...	...	...	8	3
	Native „	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1859	European Troops	1,293	...	...	...	1	1	...	...	3	...	...	...	...	5	...
1860	European Troops	1,238	...	...	...	...	1	...	...	77	36	1	...	...	115	59
	Native „	729	...	...	...	...	...	1	...	5	2	...	...	...	8	5
	Prisoners	1,890	...	...	...	...	...	...	...	801	7	...	...	...	808	173
1861	European Troops	1,220	...	...	...	...	...	1	103	8	1	1	...	...	114	69
	Native „	619	...	...	...	...	...	4	10	7	...	...	...	...	21	3
	Prisoners	2,494	...	...	...	...	...	2	169	19	...	...	...	...	190	67
1862	European Troops	1,153	...	...	...	...	...	2	1	63	...	...	...	...	66	49
	Native „	682	...	...	...	...	1	...	1	1	...	...	...	...	3	...
	Prisoners	2,209	...	...	...	...	...	...	...	23	...	...	...	...	23	12

* Strength in the circle.

† Only fatal cases entered.

Notes on outbreaks, Agra.

Statement of cholera at Agra, 1826—1872—concluded.

Years.		Average Strength.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Cases.	Total Deaths.
			Number of Cases.													
1863	European Troops	1,115	...	...	...	...	...	...	21	11	...	...	...	...	32	21
	Native "	704	...	...	...	...	2	...	...	...	...	...	...	...	2	1
	Prisoners	2,158	...	...	...	...	7	...	49	54	...	...	...	...	110	42
1865	Native Troops	647	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	Prisoners	1,830	...	...	...	1	...	...	12	18	...	...	...	...	31	20
1866	European Troops	1,002	...	...	...	...	...	...	...	...	...	...	1	...	1	1
	Native "	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...
	Prisoners	1,787	...	...	...	...	...	...	...	1	...	...	...	...	1	1
1867	Native Troops	703	...	...	...	...	1	...	...	...	...	...	...	...	1	...
	Prisoners	2,166	...	...	...	...	...	...	...	1	1	...	...	...	2	1
1868	European Troops	908	...	...	...	...	...	...	...	2	1	...	...	...	3	...
1869	European Troops	1,058	...	...	...	...	...	1	...	...	...	...	...	...	1	1
	Native "	950	...	...	...	...	...	6	3	5	...	...	...	...	14	7
	Prisoners	2,336	...	...	...	...	...	...	5	10	2	...	...	...	17	9
1872	European Troops	1,399	...	...	...	...	10	15	5	3	3	...	...	...	36	23
	Prisoners	1,661	...	...	...	...	...	...	...	...	1	...	...	...	1	...

No. 43, Morar.

The military station of MORAR, 681 feet above sea level, is situated almost due west of Cawnpore, and is 78 miles south of Agra. About 3 miles distant is the large native city of Gwalior, close to which is the Gwalior Fort. In Morar the garrison consisted of 3 batteries of artillery with the head quarters of the 23rd Brigade, the 1st Battalion, 11th Foot, and three regiments of native soldiers. In the fortress there was a battery of artillery and a detachment of 250 men of the 106th Light Infantry.

II. Details of the outbreak.—The city of Gwalior and all the surrounding country belong to Scindiah, and it is extremely difficult to obtain trustworthy information. It is known, however, that although individual cases of cholera occurred, there was no epidemic prevalence among the people. *Surgeon R. F. Hutchinson* reports a fatal case in the city on the 10th July, one on the 11th and a third on the 18th. Two more were reported on the 12th August and one on the 25th.

In the cantonments the only cases occurred in the 1-11th Foot. *Surgeon J. Tulloch, M.D.*, states:—"On morning and early of afternoon of 18th June nine men from Nos. 5, 6, and 7, double-storied barracks went or were brought to the dispensary with vomiting and purging and were detained and treated in the temporary hospital. As their symptoms did not subside after a time, the circumstance was reported by the Assistant Surgeon. When visited at 3-30 P.M., the men were found suffering more or less from choleraic disease. One man worse than the others had passed several rice-water stools. All these eight men had severe vomiting and purging, with prostration, coldness of surface, and shrivelling of the skin of fingers. Most had cramps. All had that leaden hue and sunken expression which is almost peculiar to the cholera-stricken * * *. Though the symptoms were of mild character, there could be no doubt as to the nature of the disease." The returns show no unusual prevalence of either fevers or diarrhœa.

III. Importation and communication.—"The most searching enquiry was instituted to ascertain if any known cause existed to account for this sickness in the 1-11th, but without success. There had been no communication with the infected nor for that matter with an infected district * * * *. In short nothing was elicited to account for the visitation of cholera, for cholera it was beyond all doubt."

IV. Meteorology.—"The weather was hot, the thermometer ranging from 112° to 80° during the month in the shade. The rains had not set in. The wind had been westerly and north-westerly for many days." Dr. Hutchinson in his weekly return, dated the 14th June, notes that at 10-12 A.M. of that day there had been "a blast from the east."

V. Local conditions.—The 1-11th Foot occupied two sets of barracks. One, the old one-storied barracks at the north end of the station in what are known as the left European infantry lines, the other the new double-storied buildings in right European lines at south end of the station. Four companies were in each set of lines. The accommodation was ample. "The *drainage*, if not perfect, was not calculated to engender sickness." The *water* which is drawn from wells was found on analysis to be free from contamination.

VI. Preventive measures.—Movement.—The barracks attacked were at once vacated and disinfected.

VII. Previous history.—Since 1860 up to which the annexed statistics extend, cholera has been a frequent visitor at Morar, and on several occasions has fallen very heavily on the garrison.

Notes on outbreaks, Morar.

Statement of cholera at Morar, 1860-72.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1860	European Troops -	1,279	...	...	...	2	...	...	15	130	25	1	1	...	174	87
	Native „ -	1,823	...	...	...	...	...	...	...	6	5	...	...	...	11	6
1861	European Troops -	1,106	...	...	...	...	...	...	64	133	13	...	...	...	210	152
	Native „ -	1,438	...	...	...	...	...	...	...	1	...	...	...	...	1	...
1862	European Troops -	1,048	...	...	...	...	...	...	19	21	22	4	...	...	66	39
	Native „ -	1,629	...	...	...	...	...	2	1	4	...	...	...	...	7	5
1863	Native Troops -	1,154	1	...	...	...	...	...	...	...	...	...	...	...	1	1
1865	European Troops -	1,115	...	...	...	...	...	...	1	10	1	...	...	...	12	8
	Native „ -	1,165	...	...	...	...	...	...	1	8	...	...	...	...	9	7
1867	European Troops -	868	...	...	...	...	...	1	4	8	2	...	...	...	15	10
	Native „ -	1,697	...	...	...	1	1	1	...	...	...	...	...	...	3	2
1868	European Troops -	784	...	...	...	...	...	...	...	1	...	...	...	1	2	...
1869	European Troops -	1,081	...	...	...	37	15	5	2	79	5	2	...	...	145	92
	Native „ -	1,410	...	...	...	1	4	1	...	16	...	...	1	...	23	18
1870	Native Troops -	1,433	...	...	1	...	...	...	...	...	...	...	...	...	1	...
1871	European „ -	1.407	...	...	...	...	...	1	...	...	...	...	...	...	1	1
1872	European „ -	1,386	...	...	...	...	...	1	...	...	...	...	...	...	*1	...

* Only one of the nine cases mentioned in the Report of the Medical Officer has been returned as cholera.

No. 44, Nowgong.

NOWGONG is situate in native territory, 120 miles south-east of Gwalior. The Garrison consisted of a battery of Royal Artillery, a detachment of European Infantry, and a few native soldiers.

II. Details of the outbreak.—The only three cases among the troops occurred in the Artillery. Assistant Surgeon T. H. White, M.D., states, that there were three admissions; the first on the 19th August, the second on the 20th, both among men from the same barrack; on the 6th September a woman was attacked in the family quarters. There was no prevalence of bowel complaints or fever.

III.—Importation and communication.—" No case, as far as can be ascertained, had occurred anywhere in the neighbourhood previous to the admission of the case above noted;" the European attacked on the 19th August. " Cholera had prevailed for some time at Banda, some 60 miles off, and before this was known, there had been communication between that station and Nowgong, among the natives; but no direct communication or connection of the disease in the Royal Artillery lines with the arrival of any one from Banda could be traced, though most careful enquiries were made, and no case occurred among the natives attached to the battery, till the 26th August, when one, and only one case occurred in the syces' lines, a syce's wife." " No connection was apparent between any of the cases that occurred." None of the attendants suffered.

V. Local conditions.—Except as regards the syces' lines, they are said to have been satisfactory.

VI. Preventive measures.—The affected building was in each instance vacated, and no more seizures took place.

VII. Previous History.

Statement of cholera at Nowgong, 1864-1872.

Years.		Average Strength.	Number of Admissions from Cholera.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1864	European Troops -	213	...	...	...	...	...	...	...	...	1	...	...	...	1	1
1867	Native „ -	423	...	...	...	...	..	...	...	...	1	...	...	...	1	...
1869	European „ -	170	...	...	...	...	...	3	...	3	1	...	...	...	7	4
1872	European „ -	372	...	...	...	...	...	...	...	2	1	...	...	...	3	3

Notes on outbreaks, No. 45, Jubbulpore.

JUBBULPORE. (Surgeon W. R. Rice, Civil Surgeon) lies on the line of Railway across the Peninsula between Allahabad and Bombay along which there is constant traffic. The garrison consisted of the 25th foot, a squadron of 3rd Madras Cavalry and the 21st Madras Native Infantry. The non-military native population of cantonment is returned as 16,022. The city, which is about a mile distant, has a population of 44,911. The district has an area of 3,647 square miles, and a population of 380,826.

II. Details of the outbreak.—The first case reported in the district was at Burghee in the Sehora Tehseel about 30 miles to the north-east of the city of Jubbulpore. It occurred on the 30th April and up to the 14th May there had been 12 cases and 8 deaths in this quarter of the district. Between the 18th and 29th June, 4 deaths were reported at Gowarree Ghât, a ferry on the Nerbudda, 4 miles from Jubbulpore. Occasional cases occurred here and there, but throughout the whole year only 64 deaths from cholera were registered in the Jubbulpore district. Between 6th July and 17th August, altogether 50 cases of cholera were treated throughout the city. In the Jail, out of a strength of 800 prisoners, a suspicious case occurred on the 20th July. Diarrhœa was prevalent among them during the time cholera was in the city. Among the troops not a single case of cholera occurred, nor is any death from cholera entered in the mortuary returns of the cantonment.

III. Importation and communication.—The first cases known in the district, those in Burghee, were attributed to pilgrims from Ajoodhia. This village is one of those included in the special cholera enquiry, and the circumstances were investigated by Dr. Edis, the Assistant Sanitary Commissioner. He states that on the 27th April a party of 7 persons belonging to this place returned from a pilgrimage to Ajoodhia in Oudh. The fair there had been broken up on the 7th April on account of cholera. They encamped outside the city of Ajoodhia, the old city of Fyzabad, for four days. An old woman named "Dokha" was there taken ill with vomiting and purging, but not seriously, for she was able to walk to Allahabad. Thence the party travelled by rail to Sleemanabad station, and thence she walked 12 miles to her house at Burghee, where she and her companions arrived on the 27th. On the 29th another woman of the party, who had been in constant attendance on "Dokha," was attacked with cholera and died on the 2nd May. On the same day died three others, all residents of Burghee, one of whom had been suffering for three days. He was thus attacked on the 29th or 30th April. On the 4th May another person, who "had had no communication with the returned pilgrims," died after 48 hours' illness. On the 6th May "Dokha" herself died with all the symptoms of cholera. It is said that the first case at Gowarree Ghât, a village 5 miles from the city of Jubbulpore, was a pilgrim who came from Benares and who died "immediately before the 8th June," but it is not stated when he arrived or when he was attacked. It is further said that as he lay ill in the bed of the river, "it cannot be ascertained that he had much communication with more than three" persons; of these one was a girl "who used to go to the stream to fetch water, but was *not* seen to speak to the pilgrim." She was taken ill on the 18th June and died the same day; other cases followed on the 22nd, 24th, and 27th June, and on the 1st and 24th July, but there is no evidence that any one of them had been infected by the pilgrim. Between the 18th June and 24th September there were in all these weeks only 9 cases and 7 deaths from cholera in this village of 500 inhabitants. On the 30th June, a table-servant in the employ of a gentleman living on the outskirts of Jubbulpore was attacked; on the 2nd July the master's child was attacked. It was said that the servant had been to Gowarree Ghât, had caught the disease there, and then given it to the child. But on further investigation there was no certainty that the man had been to Gowarree Ghât. If he had, the date of his visit is unknown. But even if he had, as soon as he was taken ill, he went to his house in the city and there he died. In the city the disease was spread over 22 different mohullahs or quarters. The 50 persons attacked were treated in their own houses, and in no instance did they form a focus for spreading the disease. The largest number of attacks in any one mohulla was ten, and only one furnished this number. In one there were five, in one four, in two three, in six two, and in eleven there was only a single case in each. At Saliwari, ten miles south-east of Jubbulpore, a village of 303 inhabitants, a carpenter, Burjhoo, had been to Jubbulpore from the 21st to 25th July. On the 7th August he was attacked. On the same day his son, who had not been to Jubbulpore, was seized. On the 2nd Burjhoo's brother, who had attended him, was seized. On the 3rd another person was attacked and died. "He lived in a different part of the village and had no communication with the foregoing, either personally or indirectly." On the 4th a boy, who had often been to see Burjhoo during his illness, was attacked. Up to the 13th August 17 more cases occurred, or 22 in all, of which 9 were fatal. On the 22nd July while Burjhoo was in Jubbulpore another carpenter was attacked in the same mohulla of the city in which Burjhoo was living during his visit, but no communication between the two could be traced. Both Burjhoo and the man's friends denied that there had been any. A woman who had been staying in the house with the fourth case at Saliwari was attacked on return to her own village of Nimkera on the 9th August. It is not stated if any other cases followed.

IV. Meteorology.—"The meteorological phenomena were pretty much the same as usual. The rains were very steady. It rained for 62 out of the 92 days between the 10th June and 10th September, and on 46 out of the 61 days between the first and last cases in the city."

VII. Previous history.—Although a frequent visitor cholera has rarely attacked either the troops or prisoners at Jubbulpore with great severity.

Notes on outbreaks, Jubbulpore.

Statement of cholera at Jubbulpore, 1856 *to* 1872.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1856	Prisoners -	1,733	...	...	1	...	...	51	49	...	...	...	...	...	101	61
1857	Ditto -	1,307	...	...	...	6	30	1	3	18	3	...	...	...	67	44
1858	Ditto -	1,287	...	...	1	...	...	...	...	...	...	...	...	...	1	...
1860	European Troops -	805	...	...	...	...	1	...	3	1	1	1	...	1	8	5
1861	Ditto -	861	...	...	...	...	...	...	...	...	...	1	...	...	1	...
	Native Troops -	533	...	...	...	...	...	...	...	...	...	1	1	...	2	...
	Prisoners -	1,079	...	...	...	...	...	...	2	...	...	...	...	...	2	1
1863	European Troops -	820	...	...	...	...	...	1	...	...	...	...	...	...	1	...
	Prisoners -	1,200	...	...	...	...	...	...	29	...	...	...	...	...	29	8
1864	European Troops -	757	...	...	...	...	...	1	...	...	...	...	...	...	1	...
1865	Ditto -	688	...	...	...	...	...	...	...	7	...	...	...	...	7	6*
	Prisoners -	407	...	...	...	...	...	2	1	...	...	...	...	...	3	2
1866	Ditto -	480	...	...	...	...	...	...	...	2	...	...	...	...	2	2
1868	European Troops -	633	...	...	...	...	3	10	3	...	...	...	...	...	16	12
1869	Ditto -	809	...	...	1	3	2	1	4	4	...	...	...	...	15	12
	Prisoners -	851	...	...	...	...	1	1	12	2	...	2	...	...	18	13
1870	European Troops -	773	...	1	...	...	...	...	...	...	...	...	...	...	1	1
	Prisoners -	637	...	...	...	...	1	...	...	...	...	...	...	...	1	1
1872	Ditto -	660	...	...	...	...	...	...	1	...	...	...	...	...	1	...

No. 46, Sehore.

Sehore. (Surgeon W. E. Allen,) in Central India, about 90 miles to the north-east of Indore in a direct line.

II. Details of the outbreak.—Being in foreign territory information is scanty as regards the general population. In May and June, cholera was heard of in almost every direction around Sehore. In Sehore itself a few cases occurred between the 20th May and 7th June. There was then an interval of nearly a month, when, on the 5th July, a sepoy travelling from Baroda to Oudh was attacked; on the 7th another of this same party. On the 13th a resident was seized. Up to the 7th September cases were of daily occurrence, "pretty evenly distributed between the cantonments and native town." On the 28th July, and again on the 22nd August, there was a maximum of nine on one day. In all 182 were treated among the civil population, of which 82 ended fatally. In the Bhopal Battalion, there were seven admissions from cholera between the 20th July and 1st August. "During the months of July and August both diarrhœa and dysentery were very prevalent in both the Battalion and civil population. These diseases were not at all conspicuous before the invasion of cholera, but appeared to increase in frequency and severity *pari passu* with the spread of that disease. During the latter part of July, diarrhœa was exceedingly prevalent in the Battalion, quite half the admissions into hospital being caused by that disease or by dysentery, and a number of cases was treated in the lines which do not appear in the hospital returns."

III. Importation and communication.—In the May outbreak the first case was that of a mendicant from Hoshungabad where cholera prevailed. The next was one of choleraic diarrhœa on the 31st May. It occurred in the native town, 1½ miles distant from where the mendicant was seized, a third of the same character followed on the 1st June in a place three-fourths of a mile distant from the first case. On the 5th there was one of undoubted cholera. No communication could be traced. In the July outbreak, the first and second cases occurred among the party of six sepoys already mentioned, of whom one was attacked on the 5th, and the other on the 7th. They had come through Ashta, where cholera was prevailing. On the 13th a resident was attacked, and another on the 14th. These and the cases which followed took place in various localities, most of them distant from the place in which the sick sepoys were treated. No communication could be traced; none of the hospital servants or attendants on the sick were attacked. In not a single house were two individuals attacked. There was no community of water supply among those who suffered.

IV. Meteorology.—"The only peculiarity obvious was a deferred and very scanty rain fall. No rain fell till near the end of June, and then only 1·9 inches fell. Next month the rainfall amounted to 10·3 only."

V. Local conditions.—The *drainage* is reported to be good. There is a want of proper conservancy arrangements.

VI. Preventive measures.—*Movement.*—No. 1 Company moved into camp on the 21st July; three cases followed on the 25th, 27th and 31st. "A very marked beneficial effect was immediately manifested after the movement; diarrhœa, which had been very prevalent, soon began to abate, and had almost disappeared before the camp was broken up on the 12th August.

VII. Previous history.—During the 19 years, 1854-1872, cases of cholera have been recorded among the troops and prisoners in only five of them.

Notes on outbreaks, Sehore.

Statement of cholera at Sehore, 1864-72.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1864	Prisoners	95	...	...	...	...	5	1	...	...	...	...	...	...	6	...
1865	Ditto	108	...	...	...	...	1	1	...	...	...	...	...	...	2	...
1869	Native Troops	812	...	...	...	1	1	3	...	...	...	...	...	...	5	7
1871	Ditto	822	...	...	...	...	...	...	1	...	...	...	...	...	1	...
1872	Ditto	757	...	...	...	...	..	...	7	...	...	...	...	...	7	4

No. 47, Simla.

SIMLA, *Surgeon R. Moir,* M.D.—This sanitarium, which is largely frequented by Europeans, and is the seat of the Government of India during the hot season and rains, lies in the Himalaya, 41 miles from the plains by the old road and 56 by the new. From Calcutta the distance is 1,091 miles by rail to Umballa, and thence 79 miles by road. The houses occupy different elevations on the hill sides. The average height may be taken as about 7,100 feet above the level of the sea. The highest point is 8,055 feet. The native population is returned as 14,848, and the number of Europeans is estimated at 1,500. In the cold season the greater portion of the residents, both European and Native, move to the plains.

II. Only one case of cholera occurred at Simla. The man was a coolie, who was taken ill on the 17th July at Hurreepore about half-way between Simla and Kalka by the old road. On the morning of the 18th he was admitted into the dispensary at Simla, where he remained in a separate ward for the first night. Next day he was removed to another building. He recovered. Twenty-three cases are reported to have occurred in different parts of the neighbouring country, but as this belongs to Native States, no trustworthy information is obtainable.

III. Importation and communication.—The man brought the disease with him. None of his attendants were attacked, nor, so far as is known, was there any other case in Simla.

IV. Meteorology.—The rainfall in 1872 was 71·92 inches as compared with 69·69, the average of the previous eight years.

V. Local conditions.—The chief defect is in the water-supply which is very scanty during the summer months, and is at all times very liable to contamination. The springs afford a naturally excellent water, but after every shower this is more or less mixed with the drainage of the hill sides which are far from clean.

VI. Preventive measures.—Along the new road there was no interruption to traffic, but by the old road on which Kussowlie lies all persons were diverted so as not to pass through that station.

VII. Of the previous history.—Of cholera at Simla little is known with any accuracy, and there can be no doubt that the sanitarium has enjoyed a very remarkable immunity from the disease. In 1867 there were 87 cases and 47 deaths among the native population, and 16 Europeans, chiefly children, were attacked, of whom six died. Excepting in this year, I can find no record of any outbreaks although solitary imported cases have been known in other years.

No. 48, Subathoo.

SUBATHOO.—(*Surgeon J. G. Leask,*) a cantonment in the hills between Kussowlie and Simla, with an elevation of 4,253 feet above sea level. It is situated immediately above the old road at a distance of 12 miles from Kussowlie and 22 from Simla. The garrison consisted of the 2-12th Regiment. There is besides a large native bazar with a population of about 4,500.

II. History of the outbreak.—There was not a single case of cholera among the natives. Among the Europeans there were six, three men, two women, and a child. The first was on the 11th July, two followed on the 12th, one on the 14th, one on the 21st, and the last on the 23rd. They occurred in six different buildings widely separated. The first case was ascribed to eating freely of bad bacon.

Diarrhœa was only to a slight extent prevalent among the men, but the children suffered a good deal.

III. Importation and communication.—No importation could be traced. As already observed, not a single case occurred amongst the natives. Nor was there the smallest reason to believe that the disease spread by contagion. None of the hospital attendants suffered. The sick in several cases were nursed by relatives without any bad result.

IV. Meteorology.—The wind on the 11th July was south-east. On the afternoon of the 12th it veered round to south-west and continued in this direction to the 18th, when it changed to the north-west and remained so to the end of the outbreak.

V. Local conditions.—The *drainage* is not so satisfactory as it might be. The *water* for drinking is drawn from springs and wells. The spring should be better protected, and the

Notes on outbreaks, Subathoo.

reservoirs which are filled by it more efficiently covered than by planks. The mode of drawing the water from the reservoirs by means of a leather bucket is also objectionable. The reservoirs should be raised so as to prevent the possibility of any surface drainage entering them, and the water should be taken from them either by taps or pumps. One well has been fitted with a pump, but it is arranged so that the man working it must stand on the cover which is not watertight. It did not look as if it were much used. At two neighbouring wells bheesties were busy drawing water in their ordinary fashion. In some barracks there was slight *overcrowding*. The old barracks which are leaky and ill ventilated did not specially suffer.

VI. Preventive measures.—A quarantine was established on the 24th July for those leaving the station and also for those coming in. By that time the last case had occurred. It was kept up until the 18th September, but it was only nominal.

Movement.—As soon as a case occurred in any building the affected room was immediately vacated. There was no further case among the inmates so removed.

VII. The previous history of Subathoo in respect to cholera is not favorable for a hill station.

Statement of Cholera among European Troops at Subathoo from* 1843 *to* 1872.

YEAR.	Average Strength	NUMBER OF CASES.												Total Cases.	Total Deaths
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1843 - -	816	...	...	...	...	2	1	3	...	...	2	...	...	8	...
1844 - -	870	...	...	...	2	...	...	2	1	...	...	...	...	5	...
1845 - -	817	...	...	...	2	...	2	...	108	21	...	...	...	133	42
1846 - -	1,418	...	...	...	...	...	...	2	...	...	...	...	...	2	...
1847 - -	1,225	...	...	...	2	...	1	1	...	1	1	...	...	6	...
1848 - -	1,294	...	...	...	1	...	...	9	...	...	...	...	...	10	...
1849 - -	46	...	...	...	...	...	...	...	1	...	...	...	...	1	...
1852† - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1857 - -	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2
1859 - -	938	...	1	...	...	...	...	...	...	...	...	...	...	1	...
1867 - -	751	...	...	...	1	...	8	3	26	2	...	...	...	40	19
1869 - -	1,010	...	...	...	...	...	...	...	20	8	...	...	...	28	19
1872 - -	1,134	...	...	...	...	...	...	6	...	...	...	...	...	6	3

* The station has been occupied by European troops only.
† One or two cases occurred simultaneously with the outbreak at Umballa, but no deaths.

From 1850 to 1855 the strength is not known. In 1856 it was 834, and in the subsequent years when no cholera appeared it varied from 600 to 1,019.

No. 49, Dugshaie.

DUGSHAIE.—*Surgeon William Skeen,* M.D.—Dugshaie is a station in the Himalaya 3 miles off the new cart road which leads from Kalka at the foot of the hills to Simla. The distance from Kalka is 19 miles and from Simla 42. The hill rises abruptly to a height of 6,100 feet above the sea. It is very bare and rocky, without trees and with little cultivation. The garrison consisted of the 85th Regiment, and of a detachment of men of the 72nd Highlanders sent up from Umballa for the season. There is besides a small military prison in which European soldiers from the stations within convenient distance both in the hills and plains aer confined. There are no other European residents besides the military, and the native resident sare chiefly those who attend to the wants of the troops. Their number is returned as 1,680.

II. History of the outbreak.—The first case of cholera was in a European soldier confined in one of the cells of the *military prison*. He was attacked on the 29th July. It is to be remarked that this man had been seized in the prison on the 6th March with symptoms in some respects resembling cholera. There was no vomiting or purging, but extreme depression amounting to partial collapse. The attack on the 29th July was undoubted cholera and soon proved fatal. The prison contained at the time twenty-two prisoners, each in a separate cell; three warders and a guard of eight men at the gate. The cell in which this case occurred was disinfected and shut up. On the 30th another prisoner was attacked. On the 2nd August the inmates were all removed to tents about a mile to the east. On the evening of the 5th another prisoner was seized, and on the morning of the 6th at 6 o'clock a warder was attacked. At 5 P.M. of the 7th another prisoner attacked. The camp was then moved to about 2 miles further to the south-east, and there all remained well till the 27th September when the party returned to the prison building. Seven days afterwards a man committed two days previously was seized. The prison was at once abandoned. The same day after returning to camp another case occurred, but no other followed. At the time of my visit in the end of November the party was still in tents. In the *barracks* the first case occurred on the 5th August in one of the new double-storied barracks lately finished and only just occupied. The affected room was vacated, and the inmates placed in tents on the parade ground. A second case occurred in this building on the 22nd, the whole barrack was then abandoned, and the

Notes on outbreaks, Dugshaie.

inmates removed to camp about 4 miles off on the road to Nahun. There they kept quite well, but on the 28th September, the very day after their return to the barrack they had left, a case occurred among them. They went back to camp and had no more cases. On the 21st October they returned to cantonment and, as a measure of precaution, were placed in another barrack. Including the military prison, there were altogether, between the 29th July and the 4th October, 46 cases of cholera. Of these eight occurred in camp and 38 in barracks. The disease was very heavy in the prison. Here seven cases and five deaths occurred out of a strength of 25. The distribution of admissions and deaths was as follows :—

	Strength.	Admissions.	Deaths.
Officers	... 21	...	...
Men	... 1,034	35	18
Women	... 99	6	4
Children	... 180	5	4

The disease affected many of the buildings in the cantonments, and its course from one to another is described as "most erratic." Only two single men's barracks, two family barracks, and four depôt barracks occupied by the 72nd detachment entirely escaped. The barracks generally occupy the highest part of the hill, but those occupied by the 72nd men are about half a mile distant from the others and at a considerably lower level.

Diarrhœa was prevalent, but not so much so as in the previous year. The medical officer, Dr. Skeen, is of opinion that it was of the form common in the hills, but the Deputy Inspector General informs me that he saw several cases especially in the prison which he would have returned as choleraic.

The bazar in which the native population chiefly live is much lower on the hill than the site occupied by the barracks. Among them the first case occurred on the 9th August. The man was a grass-cutter who cut grass in the cantonments, and most of the others were people employed about the barracks. Altogether there were 13 deaths, of which seven occurred in the cholera hospital, and six in the bazar. It is believed that no cholera existed in the neighbouring villages, but as they lie in independent territory little is known regarding them. It is said that at Nahun, which is 40 miles from Dugshaie, the Rajah dispersed his troops and liberated the prisoners on account of cholera, but the official return shows only nine cases as having occurred at Nahun.

The distribution of the disease according to time was thus—

	Military Prison.	European Garrison.	Bazars.*		Military Prison.	European Garrison.	Bazars.*
July 29th ..	1 case	...	...	August 19th ...	...	2	1
" 31st ...	1 "	...	...	" 20th ...	...	2	1
August 5th ...	1 "	1	...	" 21st ...	...	1	...
" 6th ...	1 "	1	...	" 22nd ..	...	4	2
" 7th ...	1 "	...	...	" 23rd ...	...	2	...
" 8th ...	...	1	...	" 24th ...	...	...	1
" 9th ...	...	...	...	" 25th ...	...	2	...
" 10th ...	...	1	...	" 26th ...	...	3	...
" 11th ...	...	3	...	" 27th ...	...	1	...
" 12th ...	...	1	...	" 28th ...	...	4	...
" 13th ...	...	...	1	" 29th ...	...	2	1
" 14th ..	...	1	1	" 30th ...	...	2	...
" 15th .	...	1	2	" 31st ...	...	1	...
" 16th ...	...	2	1	September 28th ...	...	1	...
" 17th ...	...	...	...	October 4th ...	2 cases	...	...
" 18th ...	...	...	2				

* Deaths only

III. *Importation and communication.*—The first case could not be traced to importation. "No other case had occurred nearer than Kussowlie so far as can be ascertained, and there was no instance of the disease in the bazar for several days after its invasion of the barracks." On the other hand, it is stated that "an officer who had slept at Kussowlie where cholera was prevalent visited the prison on the afternoon of the 28th, the day before the occurrence of the first case." There is not the smallest evidence that the disease was spread from the sick to the healthy. Of 70 native servants employed in attendance at the hospital not one was seized with cholera. The Assistant Apothecary was attacked. On the general question of communication Dr. Skeen observes :—"although the first cases in barracks were not brought into contact with the prison, there was sufficient opportunity for importing the disease through the guard, which was not discontinued for some days after the commencement of the outbreak in the jail."

IV. *Meteorology.*—"There being no reliable instrument at the station, the meteorology of the period must be doubtful. The prevailing wind, however, during July, was light, southerly breezes carrying mists up the valley from Kalka. During August the rainfall was often heavy and accompanied with stormy weather from every direction. The progress of the disease was not apparently influenced in any way by wind or weather."

Notes on outbreaks, Dugshaie.

V. Local conditions.—As would be expected from the description given of the hill the *drainage* is generally excellent. To this remark the vicinity of Nos. 46 and 62 family barracks is an exception, and in these the disease was prevalent. The *water* is drawn from a spring about half a mile below the barracks, and 150 feet below the bazar. No surface drainage can enter it, but after rain the water is sometimes observed to be milky. It is carried in skins on mules. Attached to the spring are two open reservoirs. As soon as cholera appeared the water was drawn direct from the spring by means of a tin tube which delivered it into the skins in which it was carried for distribution. There are one or two other springs on the hill which yield a small and fluctuating supply, but the water is almost entirely drawn from the one source above described. At one of these small springs which is close to the grave-yard, I saw a bheestee filling his mussuck; it was said to be intended for the use of the bakery. The bazar people and the depôt barracks are supplied from the same source as the cantonment generally. "The natives in the bazar use the same water as the troops, but the former collect it as it issues from the mountain side, while it is in the first place collected in a tank from which it is again drawn by leather buckets for the use of the troops. As there was comparatively little cholera in the bazar, the water was suspected of being defiled in the tank, and arrangements were made for filling the mussucks directly from the spring. The disease, however, progressed without change, and this suspicion was removed." There was no *overcrowding* in barracks. Some of the buildings are old, ill constructed, badly ventilated, and in some instances leaked; but these were not specially attacked. The only two of the single mens' quarters which altogether escaped were two of these old buildings. The prison is very badly ventilated; cells on each side open into a centre corridor which is almost completely shut up from the outer air. It requires much, free openings at each end and a continuous ridge ventilator along the roof. Steps are in progress to remedy the defects.

VI. Preventive measures.—*Quarantine* was attempted, but it was merely nominal. All supplies are drawn from outside, so that perfect isolation was impossible. One of the roads was altogether unguarded, and as a matter of fact there was very little check on communication with surrounding places.

Movement.—Particular rooms or the whole barrack in which cases occurred were vacated. Excepting the prison only one case occurred in camp, and that was shortly after removal. "The movement from the infected buildings was in every instance beneficial, and attended with the best result. The general health of the men in camps was good, and no special disease appeared to any extent. Of the numbers attacked in the new barracks, five occupied the upper floor and three the lower."

VII. Previous history.—Dugshaie has been singularly free from cholera. The station was formed and the original barracks built between 1847 and 1851, but it was not fully occupied by troops till 1852.

Statement of Cholera among European Troops at Dugshaie from* 1852 *to* 1872.

Years.	Average Strength.	Number of Cases. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Cases.	Total Deaths.
1852† - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1855 - -	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
1857 - -	...	...	...	...	...	6	6	...	...	...	...	...	...	...	12
1858 - -	176	...	...	...	...	2	1	1	...	...	...	...	...	4	1
1859 - -	566	...	...	...	...	1	...	1	...	...	...	...	...	2	...
1865 - -	889	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1872 - -	1,307‡	...	...	...	...	...	...	...	36	1	3	...	...	40	28

* The station has been occupied by European troops only.
† There were one or two admissions simultaneously with the outbreak at Umballa, but no deaths.
‡ Includes women and children.

In 1853, 1854, and 1856, there was no cholera; from 1860 to 1864, and again from 1866 to 1871 no case appeared, although the cantonment was occupied in each of these years by an average annual strength varying from 727 to 1,055. The 12 cases in 1857 occurred in a small body, the regiment having marched to Delhi.

No. 50, Sunawur.

SUNAWUR,—Assistant Surgeon F. A. Smyth. The hill of Sunawur, on which the Lawrence Military Asylum is situate, lies about a mile to the north-east of Kussowlie. The highest point is 6,100 feet above the level of the sea, and the buildings generally occupy the upper part of the ridge. When cholera appeared the strength consisted of 427 children. There were in addition the European officials who, with their families, numbered 58, and a native population of 961.

II. Details of the outbreak.—The first case of cholera among the *Europeans* occurred on the 9th August, one of the girls was attacked. The second and only other case was from the same building on the 26th August, but from a different room. Of those attacked one recovered and one died. Non-choleraic diarrhœa was unusually prevalent among the children in July and August, but great care was taken to keep it in check. During the three months ending 30th September, there were 133 cases, compared with 57 in the same period of 1871, but the increase may be due in some measure to the attention paid to every case, no matter how trivial. Among the *natives* there was only one case, and that was on the 23rd August.

Notes on outbreaks, Sunawur.

In the neighbouring village of Gurkhul not a single seizure took place.

III. Importation and communication.—There is not the smallest evidence to show that the first case was due to importation, nor could any communication be traced between the several cases that occurred.

IV. Meteorology.—The main characteristic of 1872 was the exceptionally heavy fall of rain in August, 32·7 inches.

V. Local conditions.—The house in which the two children were attacked was somewhat overcrowded. The water-supply is drawn from a spring, a few hundred feet down the hill. Both in the reservoir attached to it, and in the mode of conveyance there was ample opportunity for contamination.

VI. Preventive measures.—*Quarantine* was not established till the 21st July and was kept up till the 27th September. Accounts vary as to the strictness with which it was enforced. *Movement.*—In both instances the room attacked was vacated at once, and no more cases occurred among its inmates after removal.

VII. Previous history.—Dr. Smyth has been "unable to trace fully the history of cholera outbreaks at Sunawur in former years. There is no record of the number of seizures, nor do any data bearing on native cases exist". From the burial register it appears that in 1857 there were twelve deaths from cholera among the children in June and July. In 1862 there was one death in July, and in 1867 there were two, one in August, and one in September.

No. 51, Kussowlie.

KUSSOWLIE,—Assistant Surgeon C. Mackinnon.—Kussowlie, a station on the outer ridge of the Himalaya at an elevation of 6,335 feet above sea level. It lies 9 miles from Kalka, from which the ascent is very steep, and 47 from Umballa. Between Kalka and Umballa and a few miles from the former the Sewalik range of hills intervenes. Kussowlie is a convalescent depôt for sick soldiers sent up for the season, and also a sanitarium in which Europeans, with their families, take refuge during the hot weather and rains. The summit of the hill and the northern slopes are covered with pines, and below this cultivation on narrow terraces extends down into the deep valleys which lie all around it.

II. History of the outbreak.—The *first* known case of cholera occurred on the 28th April. The subject was a native who had just come up from the plains. As will be seen presently, no other native within the place was attacked for nearly three months afterwards. Among the *Europeans* the first person who suffered from cholera was a soldier who came to hospital on the 2nd July with diarrhœa and ague. On the night of the 4th and 5th the disease became undoubted cholera, and he died. On the 5th a child was attacked and died on the 8th. Between the 4th July, when the first case occurred, and the 2nd September when it left the European troops, there were 50 cases of cholera, and by the 4th September, when the last death occurred, there had been altogether 27 deaths. The details are as follow :—

	Strength.	Admissions.	Deaths.
Officers	22	1	1
Men	700	27	13
Women	104	3	1
Children	200	19	12
TOTAL ...	1,026	50	27

The officer, it may be remarked, had been suffering for sometime previously from diarrhœa. Bad forms of diarrhœa were very prevalent. Commencing with July there were eight admissions from this cause in the first week, 38 in the second, 21 in the third, and 38 in the fourth. In the fifth week ending the 4th August there were 29, and in the sixth week 14. The disease then declined. Of these not less than 40 cases were undoubtedly choleraic diarrhœa, and should properly have been returned as cholera, for besides the severe purging there were vomiting and partial collapse. The only symptom not fully developed was the suppression of urine. Hill diarrhœa, it may be observed, is common at Kussowlie during the rains, but it presents no such urgent symptoms as those described. In 1871, out of a larger strength, there were 63 cases of diarrhœa in the depôt.

Among the *native* population estimated at 1,800, the first case of the outbreak did not occur till the 13th July, eleven days after the disease appeared among the troops. In all there were 36 cases among them, between the 28th April and the 11th September, of which 18 were fatal.

Among the *European residents* not connected with the depôt there were three cases, one on the 4th, one on the 10th, and one on the 11th September. Of these two proved fatal.

As the sanitarium is surrounded by independent territory little is known regarding the history of the disease in the surrounding population, but so far as can be learned the villages did not suffer.

In no section of the community was the disease confined to any particular locality. Fourteen of the ranges of buildings occupied by the troops were attacked, only six escaped.

Notes on outbreaks, Kussowlie.

Cases occurred in the most erratic manner, now in one place and again in another far distant. Seven cases are returned as having occurred in hospital, but of these six were admitted with severe diarrhœa, the commencement of the disease.

As so many cases of a choleraic nature were returned as diarrhœa, the chronological record of the outbreak is incomplete. So far as the data exist the cases were distributed thus—

Date.	Depôt.	Bazaar.*	Date.	Depôt.	Bazaar.*
2nd July ...	1	...	6th August .	1	...
8th " ..	1	...	7th " ..	1	...
13th " ..	2	...	8th " ...	...	2
14th " ...	...	1	9th " ...	1	1
15th " ..	...	1	12th " ...	...	1
17th " ..	...	1	13th " ...	4	1
20th " ...	...	1	15th " ...		1
21st " ...	2	...	16th " .	1	1
23rd " ...	1	...	17th " ...	1	...
24th "	2	...	19th " ...	...	1
25th " ..	1	1	20th " ...	7	...
26th " ...	...	1	21st " ...	1	1
27th " ...	2	...	23rd " ...	1	...
28th " ..	3	...	24th " ...	2	...
29th " ...	2	...	25th " ...	1	...
31st " ...	4	...	2nd September ...	1	...
1st August ...	4	1	4th " . .	...	1
2nd " ...	2	...	12th " ...	...	1
5th " ...	1	...			

* Deaths only.

III. Importation and communication.—There was no evidence to show that the disease had been imported. The native attacked on the 28th April had evidently contracted it elsewhere, but no others were traced to communication with him. In the facts of this outbreak there is not the smallest ground to suspect that the first case was due to communication, and during its whole course, although all the circumstances were most carefully watched by four medical officers, there was not a single case in which there was any reason to believe that the disease was spread by contact with the sick either direct or indirect.

IV. Meteorology.—The season was remarkable for the unusually heavy rainfall. Between the 23rd June and 23rd September, 82 inches were registered more than in any year since 1861.

V. Local conditions.—The *drainage* of the station is perfect. The sides of the hill are so precipitous that no water can possibly lie on it, and as it consists in the main of bare rock there is little or no lodgment for subsoil moisture. The *water*-supply for the troops and other European residents is drawn from a spring about 1,000 feet below the barracks, and is carried up in skins on the backs of mules at a cost of nearly Rs. 8,000 per annum. The reservoir is quite uncovered and unprotected. The water is lifted from it by leathern buckets, and there is every opportunity for a naturally excellent water to become contaminated. An estimate has been sanctioned for covering the reservoir and fitting it with pumps. The depôt was certainly *overcrowded.* Many of the barracks although modern are ill designed and very badly ventilated. It was intended that the men in excess of the proper complement should sleep in the inner verandahs, but they leaked so badly that this arrangement could not be carried out. But with regard to the overcrowding it is to be remarked that the depôt was fuller in 1871 when no sickness occurred. In that year the maximum strength was 735, whereas the number in 1872 never rose above 700. The general conservancy of the station was reported to be unsatisfactory.

VI. Preventive measures.—*Quarantine* was commenced on the 14th July and continued up to the 9th September. The roads both leading into and out of Kussowlie were guarded by police, and no one was allowed to go either way without a pass. Very many passes were issued. The quarantine such as it was could easily be broken, and was broken, but as the object was not to protect Kussowlie which had been attacked many days before it commenced, but to prevent the spread of the disease to neighbouring places, it has little bearing on what occurred at this sanitarium.

Movement.—In accordance with the rules prescribed by the Government, whenever a case appeared in a building, the room was vacated, and if a further case occurred in any of the other rooms the whole building was abandoned, and the occupants removed to tents. At first these tents were pitched within the cantonment near the barracks, and not a single case occurred in them; but it was considered advisable to remove the inmates of affected* quarters to a greater distance, and so on the 2nd August a camp was formed on a ridge near the village of Gurkhul which lies about a mile to the north of the Kussowlie hill, in a direct line, and between 3 or 4 miles by the road. When this camp was first formed on the 2nd August, a party of 30 healthy men was sent to it, and at the same time 11 cases of

---

* Here and elsewhere, wherever the expression "affected" or "infected" quarter is used, it must be understood that it involves no theory, but is merely intended to indicate in few words that a case of cholera had occurred in that quarter.

Notes on outbreaks, Kussowlie.

cholera and 8 of diarrhœa. Nine other cases of cholera were afterwards sent out as they occurred. On the 13th August, a further party of 66 men was sent out from infected barracks, and subsequently a number of women and children were sent from other buildings in which cases had occurred. The tents occupied by the cholera cases were 400 yards distant from those in which the healthy detachments were. The total strength of this camp was ultimately—

Officers	4
Men	180
Women	10
Children	24
TOTAL ...	218

and here they remained till the 30th September when cholera had entirely left the depôt. The result was most satisfactory. Of the cases of cholera sent out four died in this camp, but not a single case of cholera occurred in it. The result is all the more noteworthy, because the tents containing the cholera patients were separated from the rest of the camp by only a few hundred yards, and the approach to these hospital tents was by a road leading past and not many yards distant from the rest of the camp. Moreover, all the supplies for the whole party were drawn from Kussowlie. Every thing was the same as supplied to the troops in depôt; even the water which was drawn from the same tank and brought in the same manner. On this point I made very careful enquiry. The Commissariat Sergeant among other witnesses assured me that the water for the Gurkhul camp was drawn from the same tank as supplied the depôt, and that it was carried out on skins which were used indiscriminately, some days for one place and some days for the other.

On the 15th August another camp was formed on a ridge which runs out below the hospital to the south-west. The ridge is very low some 700 feet below the station. The first party consisted of 56 men and 2 officers of the 1-11th Regiment, and on the 16th another detachment of the same regiment went out making up the total to 4 officers and 90 men. In this party 8 cases of cholera occurred. On the night of the 19th, there was a storm of thunder and lightning with very heavy rain, 4½ inches fell that night. Between 6 P.M. of the 19th and 11-30 A.M. of the 20th, 7 cases of cholera occurred, and an eighth man was seized on the 21st, just as they were striking the tents. Of these 8 cases 6 occurred among the party first sent out, and two among the men of the second party. The camp was moved half a mile further along the ridge to a more elevated spot, and no more cases occurred. After this movement the water continued to be drawn from the same spring as that which had been used in the first camping ground. It is remarkable that at or about the same time that the men suffered so severely, a small hamlet close by was also attacked. To what extent is not known, but the medical officer in charge of the detachment saw one of the sufferers.

VII. Previous history.—In 1845 there was a severe outbreak, part of the great epidemic of that year, but the statistics from that time to 1871 have been very favorable. Beyond a few isolated cases there was no cholera. In the years which were altogether exempt the strength varied from 46 in 1858 to 901 in 1856. The average may be taken at about 400.

Statistics of cholera among European troops at Kussowlie,* 1842 *to* 1872.

YEARS.	Average Strength.	NUMBER OF CASES.												Total Cases.	Total Deaths.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1843 European Troops	989	...	...	...	...	...	1	...	...	...	...	...	...	1	...
1844 Ditto -	978	...	...	...	...	...	1	1	2	1	...	...	...	5	2
1845 Ditto -	1,045	...	...	...	...	1	1	2	120	12	1	...	...	137	38
1847 Ditto -	881	...	...	...	1	1	...	...	...	...	...	...	...	2	1
1852 Ditto -	There was one or two admissions simultaneously with the outbreak at Umballa, but no deaths.														
1865 Ditto -	606	...	...	...	...	...	1	1	...	...	...	...	...	2	2
1867 Ditto -	327	...	...	...	...	...	...	1	...	...	...	...	...	1	1
1872 Ditto -	991	...	...	...	...	...	...	25	22	1	...	...	...	48	26

* Occupied by European troops only.

Umballa.

UMBALLA.—Deputy-Inspector General of Hospitals, British Forces, T. Crawford, M.D.; Deputy-Inspector General of Hospitals, Indian Medical Department, J. N. Tresidder; Surgeon John Ogilvy, M.D., Royal Horse Artillery; Assistant Surgeon Graves, Royal Horse Artillery; Staff Surgeon Major, W. A. Thomson, M.B., 20th Hussars; Surgeon F. G. Constant, M.D., 12th Bengal Cavalry; Surgeon C. E. Raddock, 32nd Native Infantry; Civil Surgeon R. S. Bateson. The military station has an elevation of 902 feet above the level of the sea and lies 38 miles from the foot of the Himalaya. When cholera appeared the strength of the garrison was 4,700 European troops consisting of the 20th Hussars, the head-quarters with the C and F Batteries of the F Brigade, Royal Horse Artillery, and the 72nd Regiment. There were also two Native Regiments, the 12th Bengal Cavalry and 32nd Regiment, Native

Notes on outbreaks, Umballa.

Infantry. Within the cantonment is a large native bazar with a population of 24,000, and 5 miles distant is the city, the people in which also number 24,000. The district of Umballa extends over an area of 2,628 square miles, and has a population of 1,008,952. There are 2,324 towns and villages, but only 7 have above 5,000 inhabitants in each.

No. 52, Royal Artillery.
No. 53, 20th Hussars.

II. History of the outbreak.—The first case among the *Europeans* occurred in the Artillery at 9 P.M. of the 29th August. On the 31st August at 1-30 A.M., a man of the 20th Hussars, and at 10 A.M., another artillery man were attacked. On the third of September a woman of the Artillery. Two of those in the Artillery were from the same block of married quarters. Of these four cases, the last died, the other three recovered. There was no prevalence of diarrhœa at the time. Among the officers and the civil European population no case occurred. Of the *Native troops* one trooper of the 12th Bengal Cavalry was attacked on the 11th September, the only case. Among the *non-military Native population* of cantonments there were 19 cases and 10 deaths. The first occurred on the 2nd June, a grass-cutter in the service of one of the officers of the 32nd Regiment, Native Infantry, and the last on the 5th of October. They were confined to no particular part of the station; three occurred in persons who had lately arrived from other places. The *villages* in the immediate vicinity of cantonments, as a rule, suffered little. In the city the first case occurred on the 21st May. Between this and the 21st September there were 97 deaths distributed as follow, and side by side with them may be compared the deaths in the cantonment bazar, and the cases among the Europeans and the prisoners in the jail—

No. 54, 12th Bengal Cavalry.

Cholera at Umballa in 1872.

Date.	City Deaths.	Jail.	Cantonment Bazars.	European Troops.	Date.	City Deaths.	Jail.	Cantonment Bazars.	European Troops.
21st May	1	...	...	...	19th August	4	...	...	...
2nd June	...	...	1	...	20th "	1	...	...	...
4th "	1	...	...	...	21st "	2	...	...	...
13th "	1	...	...	...	22nd "	8	...	1	...
15th "	1	...	...	...	23rd "	3	.	...	...
17th "	1	..	..	...	24th "	4	...	...	...
11th July	1	...	...	...	25th "	2	...	...	...
21st "	...	...	1	.	26th "	8	...	...	..
33rd "	2	...	...	...	27th "	1	...	...	...
24th "	...	1	...	...	29th "	...	...	1	...
25th "	2	...	1	...	30th "	1	...	...	1
27th "	...	3	...	...	31st "	1	...	1	2
28th "	1	1	...	...	1st September	1	...	...	...
30th "	...	1	...	...	2nd "	1	...	...	...
31st "	1	4	...	...	3rd "	...	...	1	1
1st August	1	3	...	...	4th "	2	...	1	...
2nd "	...	2	..	...	5th "	8	...	...	...
3rd "	3	...		...	7th "	...	...	1	...
4th "	1	...	...	...	8th "	1	...	...	...
5th "	2	...	...	...	11th "	1	...	...	...
6th "	4		...	...	15th "	...	...	1	...
8th "	2	.	...	...	16th "	...	...	3	...
9th "	1	...	...	...	18th "	...	...	1	...
11th "	7	...	...	...	19th "	...	...	1	
12th "	5	...	..	...	20th "	1	...	2	...
14th "	5	...	...	...	23rd "	...	...	1	...
17th "	3	...	..	...	5th October	...	...	1	...
18th "	1	...	...	...					

In the *district*, according to the information furnished by Dr. Bateson, the first known case occurred on the 14th April at Jugadree, and up to the end of September there had been including the city a total of 1,119 deaths reported from the disease. The first maximum is indicated by 154 deaths in the week ending the 18th May. In the two last weeks of August there was a second maximum of 65 deaths in each. Altogether cholera was reported in 187 towns and villages.

The general distribution of the disease was as follows:—

	Number of places attacked.	Number of deaths from cholera reported.
April	15	61
May	96	405
June	61	291
July	12	36
August...	14	195
September	15	71

III. Importation and communication.—As regards the Artillery "an attempt was made to trace the whereabouts the first case, a jemadar of grasscuts, contracted the disease, but no information was elicited tending to prove he was in or near an infected locality." In another paragraph the medical officer states "on enquiry no information could be elicited as to whether communication between the seat of the outbreak and any infected locality had occurred."

Notes on outbreaks, Umballa.

One hospital sweeper in the Royal Artillery was attacked, the only case among the servants and attendants on the cholera cases. As regards the case in the 20th Hussars, the Surgeon writes:—" on 24th July, Private Doune, a bandsman, 20th Hussars, who had been granted a fortnight's leave to Kussowlie to enable him to give evidence in a lawsuit then pending, started for that station. At the expiration of his leave he was detained at Kussowlie on account of the existence of cholera among the troops there. He however returned to Umballa without leave, and reported his arrival on the 10th August. He was made a prisoner and sentenced to fourteen days' drill. He resided the whole time he was undergoing his punishment in the band bungalow and was in constant communication with the other members of the band, occupants of the same bungalow. On the night of the 30th, or rather very early on the morning of the 31st August, Private Stewart of the band was brought to hospital with cholera. It does not appear that he had any special communication with Private Doune more than with any other bandsman, and moreover Doune's and Stewart's cots were at exactly opposite ends of the building. It would, I think, be rather stretching a point to positively assert that Private Doune carried the disease with him from Kussowlie to Umballa and propagated it in the band bungalow, but account for the occurrence of the solitary case as we may, there can be no doubt that the circumstances as related are highly interesting, and if nothing more, worthy of record as instancing a remarkable coincidence, particularly when it is remembered that the disease did not show itself in any other building or among any other body of men belonging to the 20th Hussars."

As evidence of communication of the disease, the following particulars are furnished by Dr. Raddock:—

"On the afternoon of the 11th September 1872, a sowar of the 12th Bengal Cavalry at Umballa was attacked with cholera; this was the first case that occurred in the Native Cavalry lines. How the man became affected with the disease is not known; he was treated in a tent pitched some distance from the Regimental Hospital with two constant attendants, one a friend or relation in the regiment, the other a hospital sweeper; both were forbidden to hold any communication with others or to enter their houses.

"On the 16th September two fresh cases of cholera occurred in the 12th Bengal Cavalry, one a grass-cutter's wife in the lines of the regiment, the other a boy in the hospital servants' quarters, son of the hospital sweeper attending on the sowar attacked on the 11th instant.

"On the 17th September the same hospital sweeper's mother was attacked with cholera. The family then consisted of the sweeper, his mother, and two children; the mother and boy were sent to the cholera hospital for treatment, the other child, a boy, was put in charge of another sweeper. The sweeper himself went to the cholera hospital to attend on his mother or boy, the latter died on the 17th September, the former on the 19th. The sweeper was ordered to remain in a hut near the cholera hospital to get his clothes washed, &c. On the 21st, he took ill with cholera, was discharged cured on the 28th September. With regard to this sweeper it was known afterwards that at nights, whilst attending on the sowar, he entered his house in the hospital servants' quarters to take food; in the house were his mother and two children, two of whom were attacked with cholera, one escaped, the sweeper himself eventually getting the disease." Dr. Bateson, the Civil Surgeon, writes:—" In the south part of the district where there was no quarantine the disease spread from village to village. At Munee Majra, where it, the cholera, was very bad, there was a staff of medical people on the alert for fresh cases, quarantine measures were adopted, the neighbouring villages escaped." Forty-five out of the 187 places attacked were placed in quarantine.

As the pilgrims returning from Hurdwar fair are believed by some to have been the medium of spreading the disease over Upper India, the following facts furnished by Dr. Fairweather, the Officiating Sanitary Commissioner of the Panjáb, who carefully investigated this point deserve attention. The first known case in the district as has been already stated, occurred on the 14th April at Jugadree, a town in the south of 11,600 inhabitants. The man was a pilgrim from Hurdwar. No other case occurred here till the week ending 18th August, and in all there were only five. The second case was on the 15th April at the village of Belaspore, which lies about 10 miles north of Jugadree. This man also was a pilgrim. Another occurred here on the 18th April, and there were no more cases. On the 19th April another of this same party of pilgrims returning to Jummoo in Cashmere was attacked at Sadhoura, a town of 11,100 inhabitants, which lies about 12 miles from Belaspore. In the week ending 27th April a resident died; in the week ending the 18th May and not till then there was another death in this place, and then only one. Dropping cases making up a total of 11 occurred up to the end of September. At Naraingbur, another march, a pilgrim is said to have been attacked and died of " fever," and the same thing is reported from the next stage on this route, Ramghur. In neither of these places did the residents suffer. The town of Munee Majra had 46 deaths up to 18th May out of a population of 6,000. There is some discrepancy here regarding the facts. The death statement shows that a pilgrim died here on the 23rd April. Dr. Fairweather from personal enquiries fixed the date as the 19th. It occurred in the dispensary. The point is of much importance as the Civil Surgeon's report shows that six persons died of cholera in this town on the 22nd and 23rd. At Roopur, a town of 8,700 inhabitants, there is a difficulty in ascertaining the particulars of the first case. The death register gives it as that of a resident on the 17th April. The Civil Surgeon says it was a pilgrim on the 22nd, and that a police constable was attacked with what is described as "bilious or summer cholera" about the same time. Whatever may be the truth on this point, it appears that during the sixteen weeks from the 17th April to the 5th August only seven deaths from cholera occurred here. In the next five weeks there were 68, making a total of 75 in this town. In the Pihowa registration circle of the Umballa district which lies to the south-west, and suffered much from cholera, there is, it may be remarked, no suspicion of importation. In the village of Buklee which is included in it, a death occurred as early as the 22nd April and 24 followed in it during the season. At Sarsa there were two deaths from cholera on the 22nd April, at Pihowa and Shapoor there was a death in each on the 23rd April.

Notes on outbreaks, Umballa.

In the neighbouring district of Kurnal also which lies to the west there was a death from cholera in the week ending the 11th April. The total deaths in that district numbered 1,085 out of a population of 610,927. In the week ending the 11th May and again in the week ending the 1st June there was a maximum of 164 deaths. In the week ending 24th August there was a second maximum of 35 deaths.

IV. Meteorology.—The rain-fall was in excess, the amount registered up to the 11th November having equalled 52·4 inches whereas the average is 44·9 inches for the year. The medical officer of the Artillery observes:—" During the month of August an easterly wind prevailed nearly the entire month, the days and nights were excessively warm and oppressive, accompanied with occasional heavy showers of rain."

V. Local conditions.—The *drainage* of the Umballa cantonment is very imperfect, water lodges in many places, especially on the front and flanks, and no improvement can well be effected without endangering the present precarious supply of water in the wells. Before better drainage must come a better *water supply.* Improvement in both is very much needed. The wells in cantonments have generally run so dry that many of them have altogether ceased to be used, and others yield, especially in the hot weather, a very small quantity. For the use of the troops wells have been sunk in low lying ground on the outskirts of cantonments, four in one position and four in another, and these are worked by bullocks. The scanty stream derived from them is carried along covered masonry channels and delivered into a series of small reservoirs near the barracks. These have wooden covers, but nothing can be drawn from them until these are removed, except in the case of two which have lately been provided with pumps. The water is well spoken of, but it is far from sufficient, particularly in the hot weather when the quantity naturally diminishes, and there is the greatest demand for all purposes including the watering of tatties. The mode of raising and delivering it is also most faulty. The wells are open and may be contaminated, especially as the bullocks and their drivers are constantly moving immediately round the mouths of them in drawing the water. After being subject to possible contamination here, the water is carried in a protected channel, but after this again it may be polluted in the reservoirs. These reservoirs are sunk into the ground. The water falls into them and then there is the needless labor of raising it again. The provision of a pump to each reservoir to draw water for a single barrack is a useless expense. The pump should be at the source of supply, and the reservoirs should be so arranged that the water can be drawn off by taps. A proper scheme of water-supply for Umballa is very urgently required, which should provide ample quantity and deliver it pure at the various points where it is required. A project to effect this most desirable object is now in hand. There was no *overcrowding.*

VI. Preventive measures.—Quarantine.—As soon as the Jugadree case of cholera was known a cordon was drawn around the station. The primary object was to prevent the ingress of pilgrims to whom an epidemic among the troops was believed to have been due in 1867. It was continued after that danger had disappeared. It could not be strict as hundreds of men were obliged to go daily to cut grass, and supplies were drawn from outside. People coming by railway were detained for four days under observation. Among these one case of cholera occurred. The Inspector of Police states—" quarantine arrangements commenced in cantonments on the 12th May, the cordon was only on the south-east side of cantonments. On the 15th May cordon was put on the Railway station, and orders were issued that all the Governor-General's servants were not to be placed in quarantine, but allowed to proceed to the hills. About the 14th or 15th July, the cordon was taken off and put on again on the 27th July, and was kept on two or three months. I cannot find out the date. I cannot state how many men were interfered with, for there were thousands."

Regarding the restrictive measures attempted among the people of the city and district, Dr. Bateson writes:—" Forty-five out of the 187 places seized with cholera were placed in quarantine. Villagers were not prevented from going to their agricultural work. My impression is that in the majority of these villages the quarantine was not strictly enforced. * * * * * *. The nearer the attacked village was, the more stringent were the segregation and quarantine measures, and the more supervised the carrying out of orders respecting them; to the best of my power I, as health officer, prevented any person from an affected village or town from going into cantonments. * * * * * Natives dare not come out of cantonments (except to go right away and not to return) lest at the time they wished to go back they should be stopped by the health officer. * * * * *
The orders issued by the civil and military authorities annoyed, vexed, and oppressed the people. In the city of Umballa, I tried to segregate the affected and take them outside the town to huts, this led to lies being told and in every possible way to the hiding of the disease; not only was the sick relation to be taken away if information were given, but so many as went with him were put under quarantine restrictions, and the house was dealt with under operation

Notes on outbreaks, Umballa.

of rules issued by the Sanitary Commissioner of the Province. To tell a lie and report the case as a fever, as anything but the cholera, and keep the sick father or the mother among them to be able to obey the traditions of their religions in the obsequies, were infinitely the better than report the truth to the sahibs with the probable result that the ties of relationship would be roughly unheeded; and the relation, if he died, burned or buried, no one knew how or by whom, a dread so bad to them that a worse could not be. It was, indeed, difficult to try and stop the cholera, and at the same time care for the feelings of the people. On this subject Mr. C. P. Elliott, Deputy Commissioner, writes to me as under:—'There were many complaints from villagers and the orders were quite illegal, as no rules on the subject (quarantine) were issued by Government. Some of the Magistrates punished for breach of quarantine rules under Section 271, Indian Penal Code, and the Commissioner very rightly objected. I think it both useless and oppressive to put villages in quarantine; it is impossible thoroughly to carry out the rule, for you must let people go to the fields, and when they have got there how can you prevent their going elsewhere; a wide door is thus opened for the police to take bribes. With regard to the cantonments, if the medical authorities consider that cholera was really kept away from the troops by this means (quarantine and cordon), I think any hardship or inconvenience to the public is to be justified; but there is no doubt that both the police and sepoys took money to let people pass the cordon, although *passes* were given pretty freely to persons wishing to pass through cantonments; yet many merchants and others were put to the greatest trouble and inconvenience, for it must be remembered that the Grand Trunk Road to Loodianah from Kurnal and Delhi, and the high road to Saharunpore and the North-West Provinces, pass through the very heart of cantonments, and although the Civil Surgeon who was the health officer gave *passes* to those whom he considered *bonâ fide* travellers wishing to pass through cantonments, yet from press of official duties he was obliged to fix an hour in the morning, when he received applications. Any persons arriving after that hour had to wait till the following morning, *i. e.*, they might be kept waiting in the road for 23 hours, and numbers were doubtless so kept daily. This remark applies to those coming from the Panjâb, but the poor creatures coming from down country were in a far worse plight; they were stopped two or three miles from cantonments and were unable to get any further: if they could not bribe the sepoys to let them in, they must have had to leave their carts and cattle and go across country for many miles till they could get round to the city and obtain a pass from the Civil Surgeon (health officer), I have no doubt many persons were thus kept waiting outside cantonments for several days. I have myself seen merchants with their carts sitting hopelessly on the other side of cantonments not knowing where to go or what to do, being suddenly stopped on their journey in the middle of the high road. If, in future, cantonments are to be put into quarantine a good pucca road should be made outside them, so that people wishing to go to places beyond them could pass round without hindrance, though the nature of the country round Umballa is such that this would not be practicable without an enormous expenditure of money.'

"The Cantonment Magistrate expresses his opinion that 'the quarantine restrictions did oppress the people.'

1. 'They could not go where they liked, and probably many who worked beyond cantonment boundaries were much inconvenienced, as no one, if they went out, could come into cantonment without a pass.'

2. 'Public works were partially stopped, and laborers residing outside cantonment could not come in without passes, and thereby suffered loss of wages, &c.'

3. 'During the first quarantine was the auspicious time for marriage feasts, and people were much inconvenienced at not being able to have them.'

4. 'It affected trade also, as no one could bring in supplies without a pass. These supplies were always taken over at the cantonment boundary by the *artees*, and the *beparis* did not care to bring them in as usual, as they could not accompany them to the *artees* through whom they were sold, not knowing and not feeling sure how they would sell them.'."

The books of four firms taken at random showed that trade suffered materially, and things were generally dearer during the quarantine than before or after it. The Cantonment Magistrate states—"it was generally supposed that the sentries on the cordon took bribes, and there is no doubt in my mind that they did so. Three accusations were made against sentries and investigated, but it could not be brought home to them."

Movement.—Whenever a case occurred amongst the troops the quarter was at once vacated, and no second case appeared amongst such inmates after removal. No other diseases arose from removal into camp.

The Umballa Jail lies close to the city, and on the road between it and the cantonment when cholera broke out there were 705 prisoners in confinement.

No. 55, Jail.

II. Details of the outbreak.—The first case occurred on the 24th July in a barrack occupied by weakly men. On the 27th, three other barracks were attacked, one prisoner seized in each, on the 28th a fifth barrack presented a fifth case. These buildings are not contiguous, but scattered over the jail enclosure. Ten more prisoners were attacked in camp. The dates of the cases have already been given in the general statement. No diarrhœa prevailed.

Notes on outbreaks, Umballa.

VI. Preventive measures.—*Quarantine.*—From the 31st July, a more strict quarantine was established than that which is ordinarily employed. All new prisoners are always kept in a separate barrack or some time after admission.

Movement.—As soon as each case occurred, the building was vacated and the inmates removed to tents outside. The ground was shifted several times before the disease disappeared. The first move was into the garden, two other changes were made within the precincts of the jail grounds. On the 3rd August a more decisive change was made to a spot, three miles on the Loodianah road, and there the several parties whom it had been necessary to keep together to economise guards, remained well. As soon as the first case appeared the well from which the prisoners were supplied with drinking water was locked up, and the vessels used for drawing it, after having been carefully scrubbed, were attached to another well. The same skins were however used for distributing the water. They were also cleaned. No further change was made in the supply for the prisoners within the walls.

VII. Previous History.—

Statement of Cholera at Umballa from 1843—1872.

Years.		Average Strength.	Number of Cases.												Total cases.	Total deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1843	European Troops -	856	...	...	1	...	...	...	3	5	3	2	1	1	16	5
1844	European ,, -	1,356	...	...	...	...	...	...	...	2	...	...	2	...	4	...
1845	European Troops -	2,439	...	1	1	3	3	2	123	227	35	2	1	...	308	205
	Native ,, -	7,358	...	2	...	12	1	2	7	79	25	4	1	...	133	71
	Prisoners - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7
1846	European Troops -	2,521	...	...	...	2	5	2	4	...	1	...	...	...	14	5
	Prisoners - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1847	European Troops -	2,5[illegible]3	...	...	...	4	...	2	3	...	3	...	...	2	14	1
1848	European ,, -	1,881	...	...	2	4	...	3	...	2	...	...	...	1	12	1
1849	European ,, -	1,505	...	...	...	3	4	...	3	...	2	2	1	...	15	...
1850	European Troops -	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1*
	Native ,, -	3,472	...	...	...	...	1	1	...	...	...	...	...	...	2	1
1851	Native ,, -	4,073	...	...	2	4	...	...	...	...	...	...	1	1	8	3
1852	European Troops -	...	...	...	...	...	...	...	1	...	67	5	...	...	...	73*
	Native ,, -	3,971	1	...	...	1	1	...	2	13	13	2	...	...	33	15
1853	Native Troops - -	2,160	...	...	...	...	...	3	...	3	...	...	...	...	6	1
1854	Native ,, -	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
1856	European Troops -	807	...	...	...	...	...	...	...	...	6	...	...	...	6	4
	Native ,, -	2,985	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	Prisoners - -	470	...	...	...	...	...	...	...	...	...	29	16	...	45	27
1857	European Troops, (at Umballa and on the march to Delhi) -	...	...	1	...	...	62	22	...	1	1	...	...	...	...	87*
	Prisoners - -	594	...	...	...	...	3	4	...	...	2	...	...	...	9	5
1858	European Troops -	941	...	...	...	...	2	1	...	...	...	...	...	...	3	1
	Prisoners - -	632	...	...	...	1	...	...	...	1	...	...	...	...	2	1
1859	European Troops -	1,581	...	...	2	...	...	...	...	...	...	...	...	...	2	...
1860	Prisoners - -	561	...	...	...	1	...	...	...	...	...	...	...	...	1	...
1861	European Troops -	1,820	...	...	...	...	...	...	10	57	4	...	...	...	71	53
	Native ,, -	823	...	...	...	...	...	...	...	4	...	...	...	...	4	2
	Prisoners - -	704	...	...	...	...	...	...	...	...	27	...	...	...	27	18
1862	European Troops -	1,767	...	...	...	...	4	...	...	...	...	...	...	...	4	2
	Native ,, -	979	...	...	1	1	6	...	...	...	...	...	...	...	8	8
1863	European Troops -	1,683	...	...	...	...	...	...	...	1	...	...	...	...	1	1
1864	Prisoners - -	866	...	...	...	1	...	...	...	...	...	...	...	...	1	1
1867	European Troops -	1,329	...	...	...	4	22	1	...	...	2	...	...	...	29	22
	Native ,, -	.937	...	...	...	...	...	6	...	...	...	...	...	...	6	3
	Prisoners - -	688	...	...	...	...	1	...	...	...	...	...	...	...	1	1
1869	Native Troops - -	913	...	...	...	...	...	...	...	...	...	1	...	...	1	...
1870	European ,, -	1,554	...	...	...	1	...	...	...	...	...	...	...	...	1	...
1872	European Troops -	1,599	...	...	...	...	...	...	...	1	3	...	...	...	4	1
	Native ,, -	903	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	Prisoners - -	1,159	...	...	...	...	...	...	10	16	4	...	...	...	30	12

* No. of cases not recorded.

No. 56, Phillour.

Phillour, (Staff Assistant Surgeon R. C. Parkinson), a small fort on the right bank of the Sutlej between Umballa and Jullundur, was garrisoned by a detachment of 63 men of the 54th Regiment from Jullundur, and 35 sepoys from the same station. The town of Phillour which is close by has a population of 7,425. Phillour is in the Jullundur district. Reference will be now made only to the town and fort.

• *II. History of the outbreak.*—The register shows that the first deaths from cholera in the town occurred on the 29th and 31st August. Only two others have been recorded, one on the 3rd and one on the 8th September. It appears, however, that there were two cases on the

10th August. Notes on outbreaks, Phillour. In the Phillour Tehseel or Revenue division of the Jullundur district 16 villages are said to have been attacked, but the people were much disturbed by the rules requiring the isolation of persons suffering from cholera and the other measures designed to check the disease, and it is believed that very much of it was altogether concealed. In September alone the deaths in Phillour city were 56 or about eight per 1,000, but they were generally ascribed to fever. Among the Europeans the first case was on the 23rd August. Two of the men of the 54th were attacked, one in the hospital where he had been for about a fortnight suffering from fever, but was convalescent, and the other in the barrack. Both were rapidly fatal. Cases followed, one on 26th, one on 29th, one on 30th August, one on 3rd September, one on 6th, one on 13th, one on 14th, one on 15th, and one on 16th. The results were as follow:—

	Strength.	Admissions.	Deaths.
Officers	3	...	...
Men	63	11	11
Women	5	...	...
Children	4	...	...

It is to be observed that every case was fatal. During the time the cholera lasted, diarrhœa was very prevalent among both officers and men, and some of the cases had a choleraic tendency. Fevers were very prevalent in the detachment prior to the 23rd August, also among the native population. During the outbreak four fatal cases of fever occurred among the Europeans. Bowel complaints and fevers also increased among the native people. The only two buildings occupied by the detachment, the barrack and the hospital were attacked. Neither the sepoys or the native followers had a single case.

III. Importation and communication.—The first cases could not be traced to importation. The two men first attacked had had no communication with each other or with the native bazar, or at least no communication could be traced. " Three men who had been present in the fort hospital when the first case occurred there on the 23rd August, were attacked with cholera, one on the 26th August, another on the 29th, and the third on the 30th August. Two men occupying the same tent were attacked within a few hours of each other." The same morning the first cases among the European soldiers occurred, four persons, Dr. Parkinson says, were seized in the town after a lull of several days. Nor in the course of the outbreak could communication be traced from one case to another. The cases which occurred on the 26th, 29th, and 30th, were among men who had been at the time in hospital along with the man first attacked. None of the attendants on the sick, some 18 or 20 in number, suffered.

IV. Meteorology.—" The wind was very slightly from the south, the evening previous to the outbreak in the fort. A misty appearance of the atmosphere something like a dust storm without wind was observed to approach from the same direction accompanied with flights of locusts the same evening."

V. Local conditions.—The fort from its small size is very confined. The hospital building which occupies one corner of it is very close and ill ventilated. The room which the men chiefly occupied is the upper story of the only barrack in the enclosure. It is airy and open, though not constructed on modern principles. There was no *overcrowding*. The detachment of Europeans previously quartered in the fort had been much stronger and enjoyed good health. The *water* is drawn from the only well inside which is in the centre, and is said to be of good quality. The sepoys prefer that of a well outside. After leaving the fort which they did on the 23rd, the very day the first case occurred, the men drank from different sources as they changed ground, and the supply was always boiled and filtered. Cases continued to occur as has been already shown for 24 days after leaving.

VI. Preventive measures.—Quarantine.—As regards this part of the district there was no actual quarantine, but I was informed that travellers were not allowed to enter the town of Phillour, and that they were warned not to go to villages in which cases had occurred. Practically people could with a little management have gone a roundabout way to any place they liked, but to avoid annoyance many turned back. The restrictive measures, I was informed by a very intelligent native gentleman, had been most distasteful and distressing to the people. For a week from 11th August, an attempt was made to keep the fort isolated, but the attempt was abandoned.

Movement.—On the 23rd August as soon as the two first cases appeared, the Europeans were moved into camp at the site of the old cantonment. For three days they remained clear of the disease. On the 30th having had three cases on this ground, they changed to another place about 2 miles from the fort. During the 14 days they were here, there were four more cases. The hospital, with 15 patients and two orderlies, remained on this spot, and had no further attacks. The others on the 14th moved 6 miles to Goone on the Jullundur road. Twelve hours after arrival there they had another seizure, and on the 16th the last occurred. They then changed to Phugwara and went on to Jullundur on the 11th October. The married people did not move into camp. They were accommodated in a bungalow outside the fort and had no cases of cholera.

VII. Previous history is shown in the annexed statement:—

Notes on outbreaks, Phillour.

Statement of cholera at Phillour 1850—1872.

YEARS.	Average Strength	NUMBER OF CASES.												Total Cases.	Total Deaths.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1850 Native Troops	1,091	...	..	...	...	1	...	...	...	...	..	...	..	1	...
1852 Ditto "	1,067	...	1	...	1	...	...	...	...	...	...	...	...	2	...
1853 Ditto "	572	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1854 Ditto "	...	...	...	1	...	..	...	...	...	...	...	...	...	1	...
1856 Ditto "	731	...	...	...	...	...	1	...	...	...	...	...	...	1	...
1865 European "	78	...	...	...	...	1	...	...	...	...	..	...	...	1	...
1869 Native "	83	...	...	...	...	...	...	...	...	1	...	...	...	1	...
1872 European "	70	...	...	...	...	...	...	...	5	6	...	...	...	11	11

From 1857 to 1871 the strength of the detachment of European troops has varied from 56 to 147. In 1869, 1870, and 1871 there was only a detachment of sepoys.

Jullundur.

JULLUNDER, (Surgeon J. J. Thomson, 54th Foot, Assistant Surgeon J. McCreery, R.A., Assistant Surgeon G. Massey, Civil Surgeon, Assistant Surgeon A. G. Grant, M.B., 7th Native Infantry), a military cantonment situated in the Doab between the rivers Sutlej and Beeas. At the time that cholera appeared the garrison consisted of G Battery, 8th Brigade, Royal Artillery, Her Majesty's 54th Foot, a detachment of the 12th Bengal Cavalry, and the 7th Regiment, Native Infantry. The non-military native population may be estimated at 10,000. The city, which is 4 miles distant, has 33,673 inhabitants. One or two civil officers with their families reside near it. The jail contains 424 prisoners. The area of the district is 1,332 square miles, and the population 783,020. The towns and villages number 1,268.

II. Details of the outbreak.—In the *district* the first death from cholera reported occurred on the 19th June. Between that date and the end of September, 70 towns or villages were attacked. These are scattered all over the district.* The disease was chiefly confined to the months of August and September. In June only two villages were attacked, and in July four. In August 35 and in September 52. In October the number fell to three. According to the statement furnished by the Sanitary Commissioner of the Punjáb, the first death was on the 28th June, and the incidence of the disease was somewhat different.

Month.	Number of places attacked.	Number of deaths.
June	2	5
July	4	11
August	33	177
September	38	169
October	3	41

The total deaths from cholera in the Jullundur district during these 5 months were 403. In the *city* the population of which taken by itself is 33,673, or with suburbs 44,821, the first deaths from cholera were two, reported on the 17th August. One followed on the 18th and others occurred almost daily up till the end of September. The total was 159, and of these 118 occurred between the 22nd August and 10th September. It was also between the same dates that cholera was chiefly spread over the district. As in the district generally the cases in the city were not confined to any particular part, but were dotted over it. The facts, however, are but imperfectly known, for there is a general impression that owing to the restrictions imposed by the authorities the disease was to a large extent concealed.

No. 57, Jail.

In the *jail* the number of prisoners when cholera appeared was 424. The first case was on the 26th August. The Civil Surgeon, Dr. Massey, is not satisfied that this was a true case of cholera. The man was a lunatic who had been picked off the streets three days previously, and had been put in the jail for want of a better place in which he could be taken care of. This man occupied a ward by himself. On the 27th there was one case regarding which there is no doubt, and about the same time one of the guards was attacked. On the 28th the Native Doctor was attacked, and on the same day a prisoner. Altogether there were five cases.

No. 58, 54th Regiment.

In the *cantonment* the first recorded case occurred on the 22nd August, a child aged seven belonging to the *54th Regiment* in No. 11 family barrack. It appears, however, that another child of the same family aged three and a half had been brought to hospital on the previous day, suffering from severe diarrhœa, which ended rapidly in convulsions and death. Dr. Thompson is now of opinion that this was also a case of cholera. Cases followed, one on the 24th from No. 11 occupants, three on the 25th, one of which was also from the occupants of No. 11, the second from a double-storied barrack, and the third, an officer's child. Between the 29th, when the next case appeared, and the 9th September further seizures took place at intervals of one or two days. There was then a lull till the 28th. On that day two more occurred, and the last case was on the 30th September.

Notes on outbreaks, Jullundur.

The disease was thus spread over a period of 40 days from the 21st August to the 30th September.

54th Foot.				Strength.	Cases.	Deaths.
Officers	...	...	...	15	0	0
Men	...	...	...	628	7	6
Women	...	...	...	103	3	2
Children	...	...	...	141	4	4

This does not include the officer's child who recovered. Eight different barracks were attacked. These were five old barracks, two new barracks, and the hospital. Ten barracks altogether escaped. The regiment arrived in Jullundur direct from England on the 4th December 1871, and had enjoyed good health. When cholera was about diarrhœa was somewhat prevalent, but it was not of a choleraic character. In the battery there was not a single case, nor was there one in the Native Regiment of Infantry. In the *Native Cavalry* detachment a sowar on duty on the quarantine picket was seized on the 24th August. He had lately returned from duty in the vicinity of some affected villages. Among the non-military native residents of cantonments returned as 11,069 in number, seven deaths from cholera were recorded. The incidence of the disease in the different quarters above-mentioned was as follows :—

No. 59, detachment 12th Bengal Cavalry.

Date.	City and suburbs (Deaths.)	Jail (Cases.)	Cantonment Bazar (Deaths.)	European Troops (Cases).	Native Troops (Cases.)
17th August	2	...	...	...	...
18th ,,	1	...	...	...	...
19th ,,	...	...	...	...	...
20th ,,	1	...	...	...	...
21st ,,	1	...	...	...	...
22nd ,,	3	...	...	1	..
23rd ,,	4	...	...	...	...
24th ,,	2	...	...	1	1
25th ,,	3	...	...	3	...
26th ,,	8	1	1	...	...
27th ,,	1	2	...	...	...
28th ,,	7	2	...	...	...
29th ,,	5	...	...	2	...
30th ,,	15	...	...	...	...
31st ,,	13	...	...	1	...
1st September	3	...	...	...	...
2nd ,,	6	...	...	...	...
3rd ,,	9	...	...	1	...
4th ,,	6	...	...	1	...
5th ,,	11	...	...	...	...
6th ,,	7	...	...	..	...
7th ,,	5	...	...	1	...
8th ,,	1	...	...	...	...
9th ,,	7	...	1	1	...
10th ,,	2	...	...	...	...
11th ,,	5	...	1	...	...
12th ,,	2	...	...	..	...
13th ,,	4	...	...	...	...
14th ,,	4	...	...	..	...
15th ,,	5	...	...	...	...
16th ,,	2	...	...	..	...
17th ,,	3	...	1	...	...
18th ,,	4	...	...	...	...
19th ,,	1	...	...	...	...
20th ,,	...	...	2	...	...
21st ,,	...	...	...	...	...
22nd ,,	1	...	...	...	...
23rd ,,	...	...	...	...	...
24th ,,	2	...	...	.	...
25th ,,	1	...	1	...	...
26th ,,	...	...	...	...	...
27th ,,	1	...	...	...	.
28th ,,	...	...	...	2	...
29th ,,	...	...	...	...	...
30th ,,	1	...	...	1	...

For three or four weeks before cholera appeared in the 54th Regiment, colic diarrhœa and other bowel affections had been prevalent amongst them.

III. Importation and communication.—Dr. Thomson, although he carefully investigated all the circumstances of the first case, was unable to trace it to importation. Not a single case had been known in the cantonment before the children were attacked on the 21st and 22nd August. Cholera had been in the city for some days, but the men were not allowed to go there. Of the attendants on the cholera patients, including an apothecary and six or eight native servants who were exclusively employed on this duty, not one showed the smallest symptoms of cholera. Several facts are known which Dr. Thomson is inclined to interpret by contagion. The two children attacked on the 21st and 22nd came from the same quarter and slept in the same bed. Two others of the same family escaped. On the 24th a woman was attacked, she was a friend of these children's parents and had been with them in their illness before they went to hospital. On the 25th her husband was seized. The woman had been 5 hours ill before admission into hospital. After going to hospital her husband did not see her. She was attacked at 1 P.M. on the 24th, and he at 8 A.M. on the 25th August. In two other instances a case in one barrack was followed in a few hours by a second case. The ayah who attended the officer's child was afterwards herself seized and died. The child was attacked on the Sunday forenoon and continued ill for a long time, it recovered. The ayah was seized on the Tuesday evening. She lived in the same compound and was in constant attendance on the child. The family barracks, it may be observed, were originally intended for single men, and the individual quarters are generally separated by only a low wall. These walls are now being raised to the roof, so as to divide the quarters completely.

Notes on outbreaks, Jullundur.

Some facts are mentioned by Dr. Massey, which appear to him to favor the doctrine of contagion. The prisoner attacked on the 27th had on the 24th surreptitiously received some tobacco from one of the guards, a burkundauz. This burkundauz was himself attacked with cholera at noon of the 27th August, the prisoner at 10 P.M. of the same day. The burkundauz lived in the city, and went there whenever his duties at the jail allowed him. I ascertained that he had been a sentry at night over the ward in which the prisoner in question was attacked. His beat was close to the prisoner's cot, and he slept in a small hut in the immediate vicinity, only 8 or 10 yards distant.

The Native Doctor attacked on the 28th had been attending the previous cases. None of the other attendants suffered.

The prisoner attacked on the 28th at midnight had at 5 P.M. of the same day, while at work outside the jail, received some sweetmeats and a drink of water from a fakeer, but there is no suspicion that either the fakeer or any persons living near him had suffered from cholera.

In the history of the disease among the people of the district Dr. Massey believes that there is much evidence of communication, but as his investigation on this point was still in progress, I must leave the details to be recorded by the Sanitary Commissioner of the province.

IV. Meteorology.—"Heavy rains," Dr. Thomson reports, "preceded the outbreak; from 26th July to 10th August it rained in torrents every day, two days only excepted, and on the 14th August heavy rain again occurred. The weather following this was oppressive and muggy to a degree. There was little or no wind experienced." On the 27th August there was again a heavy fall of rain. In September rain fell on six days.

V. Local conditions.—The *drainage* is reported to be bad. The *water*-supply is from wells. Of these there are seven in the 54th lines. They are covered, but are not provided with pumps, and water is drawn from them in the usual native method. The position of these wells close to buildings and surface drains in some cases skirting their immediate vicinity, is objectionable. The mode of drawing and distributing the water in skins is also objectionable. There is no evidence that the occupants of barracks supplied from any particular well suffered more than others. There was no *overcrowding;* the rations were good, and the conservancy carefully attended to. There is no appreciable difference in the sanitary condition of the lines occupied by the 54th and of those occupied by the Artillery.

In the Jail the prisoners all drink water from the same well.

VI. Preventive measures.—*Quarantine.*—On the 15th August as cholera was known to be in the vicinity, a cordon of Native Cavalry and Infantry of Police and of Chowkedars specially entertained for the purpose, was established around the cantonment. The sentries had orders to allow no one to enter without a pass, and those who wished to go out were warned that they could not return without a pass. It is not known how many of these passes were given, they were issued by the Cantonment Magistrate, by the Deputy Commissioner, and by the District Superintendent of Police. The Cantonment Magistrate alone issued 250, so that the number was great. European passengers by the Railway entered without any examination. Native passengers who came from an infected locality were detained in quarantine for three days. Those who came from other places were seen by a Native Doctor, and if they presented no symptom of cholera were allowed to go. When a case of cholera occurred in the bazar the person was removed to a special hospital, a friend was allowed to accompany and remain with him, but all further communication with his family was cut off. The people were very averse to this arrangement and petitioned against it. It was then agreed that if a case occurred in a house the house should be put in quarantine, and this was carried out in one instance. Complaints were also made by the civil officers and others of the inconvenience of the cordon, as it interfered with supplies and even with the post. Colonel Millar, the Cantonment Magistrate, has been 18 years at Jullundur. In former years when no such precautions were attempted the disease was not worse, and indeed it was less than during the past season.

The jail was isolated as much as possible, but it was impossible to maintain a strict quarantine.

In the district no restriction was imposed on travellers. They were allowed to enter the city and to move about as they liked. Whenever a case of cholera was known to have occurred in a village or in the city, the person attacked was removed to a hospital set apart for the purpose, and any one of his friends who accompanied him was also isolated from the the rest of the family. Six such hospitals were provided for the city, and to each was attached a *hakeem,* and two servants besides the friends attending. Altogether nearly 203 cases were treated at these hospitals. None of the establishment suffered, and only one of the friends attending. The particulars of his seizure are not known. A few cases were subsequently

Notes on outbreaks, Jullunder.

treated in their homes, and in none of them did the disease spread. The people of Jullundur city strongly objected to the restrictive measures. They were willing, they said, to have their houses in which any case of cholera occurred put in quarantine, but they did not like any member of their family being taken away from them, and placed in a cholera hospital. In the case of their women they regarded such a procedure as a disgrace. They petitioned against the orders, but the petition was not acceded to. Some persons were punished under the Penal Code for not conforming to the orders regarding the isolation of cases of cholera, and the decision was upheld on appeal to the Chief Court of the province. Many people left the town from fear of the restrictive measures. When cholera appeared in a village the rules directed that sentries should be placed around it, that no one should leave it except the persons attacked with cholera, who were isolated outside. On the removal of a case to the hospital the house in which it occurred was fumigated and cleansed. On the death or recovery of the patient his clothing and bedding were either burned or disinfected. The purification of affected houses was in most instances attended to, but in other respects the rules as regards villages seem to have been imperfectly acted on.

Movement.—In five instances in which buildings in cantonments were evacuated, either in whole or part, immediately on the appearance of a case, no further seizures took place among the occupants after their removal into camp on the race course. From No. 11 family barrack where the two first cases occurred on the 21st and 22nd August, the inmates were transferred on the 23rd to another barrack, No. 1, which happened to be vacant. One case followed here on the 24th. On the 25th it was abandoned and the occupants removed to a camp near the Railway station; that night another case occurred. They remained well till about the 29th August, when, on account of heavy rain, they moved into a vacant bungalow close by. Here another case occurred on the 31st. On the next day they removed into tents at Jamsheer, 4 miles to the south of the cantonment. On the 9th there was a case. They did not shift ground. No more cases occurred. They returned to cantonments, first encamping on the race course for a week as a precautionary measure, and then re-occupied their barrack on the 23rd September. In No. 10 family barrack there was a case on the 3rd September, and another followed on the 4th before they could leave it. On the 5th they encamped at Jamsheer, kept well and returned on the 23rd. But on the 30th, a further seizure took place among them in this barrack. They left it, had no more cases, returned to cantonments on the 17th October, first encamping on the race course, and then on the 23rd October re-occupying their barrack.

There was some fever among the people when in camp, but it was equally prevalent in the cantonment at the same time.

VII. Previous History has been very favorable.

Statement of Cholera among European Troops, Native Troops and Prisoners at Jullundur, 1846 to 1872.

YEAR.		Average Strength.	NUMBER OF CASES.*												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1846	European Troops (including Loodiana) -	1,216	...	...	1	...	...	...	3	2	...	...	...	...	6	...
1847	European Troops (with Hooshiarpore) -	673	...	...	...	...	...	...	...	...	...	...	...	1	1	...
1848	European Troops -	1,173	...	...	...	...	...	...	2	...	2	...	...	1	5	...
1849	Ditto „ -	1,390	...	...	...	2	...	...	...	...	...	1	...	...	3	...
1850	Ditto „ -	...	...	...	...	...	1	1	...	...	...	...	...	...	...	2*
1851	Native „ -	3,429	1	...	...	...	...	...	1	1	...	...	...	...	3	1
1852	Ditto „ -	3,406	...	...	1	...	...	...	...	...	...	...	...	...	1	...
1853	Ditto „ -	3,486	...	...	...	...	...	...	...	1	...	...	...	...	1	...
1854	Ditto „ -	...	...	...	...	...	3	...	...	1	...	...	...	...	4	...
1855	Prisoners -	345		...	...	...	...	...	...	1	...	...	...	...	1	...
1856	Native Troops -	2,247	...	...	...	...	...	1	...	...	...	...	...	...	1	...
	Prisoners -	367		...	...		1	...	...	...	...	...	...	...	1	...
1857	Prisoners -	350	...	...	...	...	...	...	...	4	16	...	...	...	20	5
1858	European Troops -	898	...	...	...	...	...	...	...	23	11	...	...	...	34	22
1861	Ditto „ -	1,015	...	1	...	...	...	...	...	...	...	...	...	...	1	...
1867	Ditto „ -	788	...	...	...	...	...	...	...	...	12	...	...	...	12	9
	Native „ -	486	...	...	...	2	...	...	...	1	...	...	...	...	3	1
1869	European „ -	1,022	...	...	...	...	1	...	...	1	...	...	...	...	2	2
	Native „ -	476	...	...	...	1	...	...	...	...	...	...	...	...	1	...
1872	European „ -	1,028	...	...	...	...	...	...	...	6	6	2	...	...	14	12
	Native „ -	593	...	...	...	...	...	...	...	...	1	...	...	...	1	1
	Prisoners -	340	...	...	...	...	...	...	...	2	...	...	...	...	2	2

* Number of cases not recorded.

No. 60, Ferozepore.

FEROZEPORE.—The district lies to the south-east of Lahore. It has an area of 2,692 square miles, a population of 533,416, and contains 1,312 towns and villages, but of these only two have more than 5,000 inhabitants in each.

Notes on outbreaks, No. 60, Ferozepore.

II. Details of the outbreak.—According to the Police returns there was one death from cholera in March and two followed in two different places in June. In July 25 deaths from this cause were registered in three places, the village of Mehraj contributing 22 out of this number. In August the disease continued in Mehraj, no less than 104 deaths from it were registered in that month. At Nathanah there were 14, and at a third place, Danah, 5, altogether the total for the whole district in this month was 123, divided among, and confined to these three places. In September the deaths were distributed over 12 places and numbered 125 in all. In October there were 45 in five places, and in November a single death from cholera was registered. In the city of Ferozepore with a population of 20,592, no death from this cause was recorded. The garrison of cantonments consisted of 2 batteries of artillery, the 39th Foot, the 18th Bengal Cavalry and the 28th Native Infantry. Among the troops no case of cholera has been recorded and no report therefore received, but during my visit to Peshawur I had the opportunity of obtaining some information from Surgeon J. H. Ross, M.B., and Assistant Surgeon A. S. Davis, of the 39th Regiment, which had moved to Peshawur in course of the annual relief. From them I learned that on the 30th July a man of the Regiment was attacked with severe vomiting, purging and collapse, but no suppression of urine. The attack was attributed to drinking ginger beer while heated. His case was not believed to be, nor was it returned as cholera. This man, it may be remarked, seems to have been susceptible to such attacks, and had one of a similar nature at Deolalee on first arrival in the country. This was attributed to eating the wild castor oil seeds. Before this man was admitted into hospital diarrhœa had become very prevalent in the regiment, so much so, that on the 31st July, a regimental order was issued " warning the men of the danger of letting looseness run on and directing them to go to hospital for a dose of medicine at once." Dr. Davis, who was in medical charge of the regiment at the time, stated that this prevalence of diarrhœa lasted for about six weeks, and at one time there were as many as 60 and 70 applications for astringent medicine daily. The extent of this prevalence of diarrhœa however varied much during this time. In the return for the week ending 9th August, Dr. Davis remarks.—" There is a general tendency to diarrhœa." Next week, he says, " the tendency to diarrhœa is much less." In the week following, "some tendency to diarrhœa still continues." In the week ending 27th September he notes, " there is an increase of dysentery and diarrhœa." It is worthy of notice that at Nathanah, 54 miles south-east, and at Mehraj, 6 miles east from Nathanah, two of the few places in the district which suffered with any severity, the first deaths from cholera were registered on the 25th and 26th July. In Mehraj the outbreak continued severe till the 14th September, and after a lull, fatal cases were again registered on the 25th and 28th of that month.

VI. Preventive measures.—The Civil Surgeon, H. F. Williams, M. D., writes—"Especial care was, by the assistance of the Police, taken to isolate villages where cholera appeared, and strict quarantine was instituted at the different ghauts leading from Lahore, also on the routes from Loodiana, at both of which places cholera was prevalent."

VII. Previous History has been as a whole very favorable. In the great epidemic of 1861, the European troops almost altogether escaped, and in 1869 again there was but one solitary case among them just as there has been in 1872.

Statement of Cholera at Ferozepore, 1844 *to* 1872.

Year.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1844	European Troops -	375	...	...	...	...	5	...	...	2	...	...	...	...	7	2
1845	European „ -	1,130	...	...	...	...	2	36	46	2	14	...	1	...	101	45
	Native „ -	6,530	1	...	4	3	...	25	29	9	...	1	...	1	73	21
	Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1846	European Troops -	1,023	...	...	1	4	1	1	2	9	2	...	1	...	21	6
1847	„ „ -	1,206	...	...	...	...	...	...	...	...	4	...	1	...	5	3
1848	„ „ -	1,647	...	...	1	1	...	...	1	...	...	...	...	...	3	...
1849	„ „ -	355	...	...	...	...	...	...	...	...	...	1	1	...	2	...
1851	Native „ -	3,249	...	...	1	3	...	...	...	...	...	...	...	...	4	1
1852	„ „ -	3,984	...	...	1	3	...	...	1	...	...	...	...	...	5	...
1853	„ „ -	2,233	...	...	1	...	...	1	...	...	...	...	...	...	2	...
1856	European „ -	1,025	...	...	...	...	...	...	...	165	35	...	...	...	200	181
	Native „ -	2,120	...	...	...	...	...	...	...	11	26	...	...	...	37	17
	Prisoners -	495	...	...	...	...	...	...	...	...	8	...	...	...	8	2
1858	Native Troops -	...		...	...	...	...	1	...	...	...	...	...	...	1	...
1860	European „ -	1,086	...	...	...	...	...	...	...	...	1	...	...	...	1	1
1861	European „ -	889	...	...	...	...	...	...	...	...	2	...	2	...	4	1
	Native „ -	512	...	...	...	...	...	...	...	...	48	6	...	...	54	30
1862	European „ -	967	...	...	...	...	...	...	1	4	...	...	...	...	5	4
1867	European „ -	778	...	...	...	...	...	3	12	1	...	...	...	...	16	8
	Native „ -	583	...	...	...	...	...	5	...	...	...	...	...	...	5	1
1869	European „ -	1,145	...	...	...	...	...	...	...	1	...	...	...	...	1	1
	Native „ -	594	...	1	...	...	...	...	...	...	...	...	...	...	1	...

In 1852 one or two cases occurred among the European Troops simultaneously with the outbreak at Umballa, but no

Notes on outbreaks, Mooltan.

MOOLTAN (Surgeon R. Rouse, Civil Surgeon, Surgeon Curtiss Martin and Assistant Surgeon M. Gallwey, M.D., 41st Regiment), lies to the south-west of Lahore, the district of Montgomery intervening, has a population of 459,780 in an area of 5,882 square miles, and contains 1,211 townships, of which only four have more than 5,000 inhabitants in each. In cantonment the garrison consisted of C. Battery, 19th Brigade, Royal Artillery, the 41st Foot, 19th Bengal Cavalry, 31st Native Infantry. In the fort which immediately adjoins the city of Mooltan there were 80 men of the 41st, 50 sepoys and a few families of the 41st, for whom there was not sufficient room in cantonments. In the jail, in August, there were 780 prisoners.

No. 61, Cantonment.

II. Details of the outbreak.—In the whole district only two deaths from cholera were recorded in 1872. In the artillery there were no cases of cholera. In the end of July there were six cases of slight diarrhœa, and a few occurred in August. In the 41st there were three cases of cholera among the men, neither officers, women or children suffered. They occurred 1 on the 12th August, 1 on the 14th and 1 on the 15th. None of the Native troops were attacked. About the 20th August a child died in the bazar with suspicious symptoms, and a water-carrier was attacked on the 25th, but recovered. In the *jail* a prisoner who had been nine months in confinement was attacked with all the symptoms of cholera on the 3rd August. Beyond these few cases none are known to have occurred either among the troops, the prisoners or the general population of Mooltan, nor during the outbreak was diarrhœa prevalent, but a few cases occurred in July and August, in which there was violent purging and vomiting. Among the Europeans fevers increased when cholera appeared, and became very prevalent later in the season. In November the 41st suffered from them so severely that it was considered advisable to move them into camp. The change was attended with excellent result. The prevalence of fever in the jail observed a similar rule. Neither among the troops or prisoners was it of a fatal character.

No. 62, Jail.

III. Importation and Communication.—In no instance could the cases be traced to importation or infection. Of 15 persons who came in contact with the three sick men in the 41st, none suffered. In none of the other instances either were the attendants attacked.

IV. Meteorology.—Dr. Martin states—"The meteorology during July and August was quite exceptional, the monsoon or rain bearing wind rarely reaches the Mooltan district, but this year it was to a great extent under its influence." The south-east wind blew, and locusts were seen.

V. Local conditions.—The drainage is reported to be bad. The water is drawn from wells, which are for the most part covered.

VI. Preventive measures.—*Quarantine* was established on the 1st August, and all people arriving by rail were detained under observation for some days. The people much objected to the arrangement; only one case of cholera occurred among the new arrivals. A woman who arrived from the Sealkote district on the 22nd was attacked on the 24th August. In the 41st Regiment the quarters in which cases occurred were immediately vacated.

VII. Previous History.—Cholera has never been severe among the troops at Mooltan, and in very few years have any cases occurred.

Statement of Cholera at Mooltan, 1852 *to* 1872.

YEAR.		Average Strength.	NUMBER OF CASES.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1852	Native Troops -	2,467	...	...	...	1	...	...	1	1	1	...	1	...	5	4
1853	Ditto -	3,464	...	...	...	...	...	...	...	...	...	...	1	...	1	1
1854	Ditto -	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
1856	European Troops -	80	...	..	...	...	...	...	...	3	...	5	...	...	8	3
1859	Ditto -	1,030	...	1	1	...	...	...	...	...	...	...	...	...	2	...
1862	Ditto -	1,117	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1867	Native Troops -	1,040	...	...	...	...	...	...	3	...	...	...*	...	...	3	2
1869	European Troops -	1,123	...	...	...	.	...	1	...	...	...	...	...	...	1	...
1872	Ditto -	1,094	...	...	...	...	...	...	...	3	...	...	...	...	3	2

Notes on outbreaks, Sealkote.

SEALKOTE.—The district to the east and south-east of Goojrat has an area of 1,969 square miles and a population of 994,458. It contains 2,317 towns and villages. The cantonment and civil station adjoin the city, which has a population of 25,337. The garrison consisted of E. Battery, A. Brigade, Royal Horse Artillery, the 5th Lancers, the 58th Foot, the 17th Bengal Cavalry, and the 12th Native Infantry.

II. Details of the outbreak.—In the district, omitting a doubtful entry in January, two deaths from cholera were registered in June, 27 in July, 38 in August, 188 in September, and 27 in October. Both in June and July the disease was confined to one or two places. In August, 19 suffered, and in September, 31. But in very, few of the places attacked does the outbreak appear to have been violent. In August the highest number of deaths registered in any one place was fourteen. In thirteen of them it did not exceed two. In September the highest number in any one place was 27, and in 16 it did not exceed two.

No. 63, 5th Lancers.

No. 64, 58th Regiment.

In the cantonment among the European troops only five cases occurred. In the 5th Lancers *(Assistant Surgeon John Atkinson)* a man was attacked on the 22nd April; he died. No other case occurred in this regiment till the 4th September, when an officer was attacked. He had just returned from Murree where cholera then was, but the precise dates are not given. In the 58th Regiment *(Surgeon E. L. Lundy)* there were three cases; all occurred on the same day, the 25th May, and all were fatal. Among the native population of cantonments two deaths from cholera are registered in May, the first on the 20th, and the second on the 24th. The only other death assigned to this cause is entered on the 12th October.

III. Importation and communication.—The first cases could not be traced to importation. The first attack in the 5th Lancers was attributed to bad ginger beer. The first man attacked in the 58th had had diarrhœa for three days. The second had been intoxicated and lay in the wet all the previous night. The third case in the 58th Regiment was an attendant in hospital; he was attacked the same day as the other two.

IV. Meteorology.—Dr. Lundy states that "cholera was present in the territory of the Maharajah of Cashmere in one village at a distance of about 40 miles. The day previous to the attack in the 58th Regiment a strong wind was blowing from the direction of this village and was followed by very heavy rain lowering the temperature 11 degrees."

VI. Preventive measures. Quarantine.—The authorities were very active in adopting measures which they believed would arrest the progress of the disease. The building in which any case occurred was promptly evacuated and the occupants removed to camp. The Deputy Commissioner, Major C. V. Jenkins, writes—"On the 6th May a telegram informed me that cholera had broken out amidst the pilgrims assembled at the annual fair at Hurdwar. I immediately gave orders for the Ravee to be watched closely at the Shahpore ferry adjacent to the Riah Tehseel, and I also gave orders for all parties to be examined by the native doctor at Riah dispensary, and not to be allowed to proceed onwards if they showed any symptoms of the disease, but before the telegram reached me the greater portion of the pilgrims from these parts had returned to their homes, and on being examined showed no signs or symptoms of the disease. Of course I could only watch those in the larger towns who were known to have gone to Hurdwar, but the result of the reported examination by the native doctor was highly satisfactory." On the 22nd May when news arrived that cholera had broken out at Jummoo and that 20 persons had died of it in one day, quarantine was established at Dallowwallee, three miles from the station, the point where the Jummoo high road bifurcates to the city and cantonments. These approaches were carefully watched both by the civil and military authorities. The ferries on the Chenab at Gondal and Chaprar were also quarantined. Wherever a case was known the village was placed in quarantine. But in spite of these measures "cholera flitted about the district in no very fatal or epidemic form, making periodical pounces as it were, carrying off two or three at a time, and then flitting elsewhere." On the 17th August two cases were reported at Lidra, two miles south-west of the city. It soon showed itself in other villages; they were isolated as much as possible, and other ferries quarantined. On the 26th August cholera appeared in the city of Sealkote. The cases were removed to a hospital set apart for the purpose, 64 seizures and 36 deaths out of 30,000 up to the 20th September. About the middle of August, when cholera was most prevalent in the city, a case occurred at the Post Office in cantonments. The disease left the district on the 21st October. Altogether 532 were seized and 262 died.

"I fear," remarks Major Jenkins, the Deputy Commissioner, "that a considerable loss may accrue to Government in awarding compensation to choongee, ferry, as well as serai contractors, owing to the restrictions it was necessary for me to carry out in endeavouring to stave off the spread of the disease." The amount of loss thus incurred is estimated at Rs. 5,842-6-0.

VII. Previous history.—The remarkable immunity from cholera which the station of Sealkote has enjoyed is shown in the annexed statement.

Notes on outbreaks, Sealkote.

Statement of Cholera at Sealkote, 1853 *to* 1872.

Years.		Average Strength.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Cases.	Total Deaths.
			Number of Cases.													
1853	Native Troops	2,814	...	...	...	...	1	...	...	1	...	...	...	1	3	...
1854	Native Troops	...	...	...	...	1	1	...	...	...	...	...	...	...	2	...
1861	European Troops	1,494	...	...	...	...	...	1	...	...	...	...		...	1	...
	Native "	431	...	...	...	1	...	...	...	...	...	...	...	...	1	
1862	European Troops	1,438	...	...	...	...	...	...		5	9	...	...	...	14	10
	Native "	400	...	...	...	...	...	...	...	3		...	...	...	3	...
	Prisoners	277	...	...	...	...	...	...	...	33	...	...	...	...	33	10
1865	Prisoners	308	...	...	...	...	...	...	1	...	...	...	...	...	1	1
1872	European Troops	1,516	...	...	...	1	3	...	...	...	...	...	...	...	4	4

No. 65, Umritsur.

UMRITSUR—Assistant Surgeon F. M. Mackenzie, Civil Surgeon—The town of *Umritsur* lies on the line of rail, 32 miles to the east of Lahore, and has a population of 136,609. The district covers 1,556 square miles, and the inhabitants number 832,750. The garrison consisted of a battery Royal Artillery, 80 men and of about 200 European Infantry, of whom 70 were with the Artillery in the fort and the remainder in the cantonment. In the cantonment also there was a wing of 17th Native Infantry. The prisoners numbering, 935, were accommodated partly in the old jail, which is within the city walls, and partly in the new jail, which adjoins the station.

II. Details of the outbreak.—Among neither the troops or followers nor among the prisoners did a single case of cholera occur. Altogether 94 deaths from cholera were reported in 37 out of the 1,574 towns and villages in the district. The first death occurred on the 9th June and the last on the 27th September; only three deaths were reported in June and five in July. In August there were 45 and in September 38. This does not include three deaths reported during January, February, and March. The places of attack were widely scattered over the district, and in only one of them, Futteahbad, was the disease severe. Here, with a population of less than 5,000, there were 34 deaths from cholera, 29 of which occurred between the 14th and 31st August. In most of the villages there were only one or two isolated cases. In the city twelve cases were known to have occurred; they were from different quarters.

III. Importation and communication.—The disease could not be traced to importation, nor could its spread in any instance be ascribed to communication. The sick were treated in their own houses, and the house subsequently disinfected. In no case were any of the other members of the family attacked.

V. Local conditions.—In 1869, after a very severe outbreak of cholera, the sanitary condition of the city was reported on by a special Committee, and the great defects under which it labored, especially as regards drainage, conservancy, and water-supply, were brought to notice. Since then nothing may be said to have been done to remedy these evils, and the state of the place in 1872 remained practically the same as it was in 1869.

VI. Preventive measures.—Dr. Mackenzie believes that the disease was not concealed. No attempt was made to take the sick from their homes or to isolate villages in which cases occurred. Throughout there was free and constant communication with Lahore where cholera was prevailing. At one time it was proposed to stop the trains by which the local traffic is mainly conducted, but this was over-ruled. Quarantine was thought of, but given up on account of the expense. All that was done was to have a native doctor to inspect the passengers as the trains arrived. If any cases of cholera had been discovered among them, they would have been removed to the temporary hospital which had been built for their reception. But only one case of diarrhœa was detected.

Notes on outbreaks, No. 65, Umritsur.

VII.—Previous history.—The statistics of cholera among the troops is given in the following statement:—

Statement of Cholera among the Troops and Prisoners at Umritsur from 1852 *to* 1872.

Year.	Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
		January	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1852 Native Troops	1,135	...	...	1	...	...	...	1	...	1	...	2	...	5	1
1854 Ditto „	...	...	...	...*	...	...	1	3	...	...	1	...	...	5	...
1856 European Troops	73	...	...	...	...	...	...	...	...	8	1	...	...	9	6
Native „	2,017	.	...	...		...	...	1	...	2	...	...	...	3	1
Prisoners	787	...	...	...	...	...	...	...	...	3	3	..	...	6	2
1857 European Troops	...	...	..	...	...	...	...	...	26	...	1	...	...	...	27*
Prisoners	720	...	...	3	1	...	...	...	30	14	...	1	...	49	17
1858 Native Troops	..		...	...	...	1	...	...	...	...	...	...	...	1	1
Prisoners	647	...	...	...	...	2	..	1	...	...	...	.	...	3	...
1859 European Troops	407	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Prisoners	408	...	...	...	...	...	...	...	...	...	..	...	...	1	...
1860 European Troops	470	...	...	...	...	...	...	...	...	...	1	...	...	1	...
1861 European Troops	481	..	...		...		...		...	50	...	...	...	50	41
Native „	260	...	...	...	...	...	...	...	...	16	...	...	..	16	10
1862 European Troops	532	...	...	...	2	...	...	...	11	17	..	...	...	*30	15
Native „	449	...	...	...	...	...	...	...	...	4	...	...	...	4	2
1863 Native Troops	475	...	..	...	1	...	...	...	...	..	...	...	...	1	...
1867 European Troops	138	...	...	...	...	...	...	...	...	1	...	...	...	1	1
Native „	144	...	...	...	...	...	...	...	...	1	...	...	...	1	1
Prisoners	571	...	...	...	...	...	3	3	5	...	...	...	...	11	4
1869 European Troops	125	...	...	...	...	...	...	...	8	1	...	...	...	9	7
Prisoners	583	..	...		...	...	...	...	7	...	...	...	..	7	6

* Deaths only recorded.

The cholera history of the city and district previous to 1869 is obscure. The Committee already mentioned, state that the former suffered in 1805, 1813, 1827, 1845, 1856, 1862, 1865, 1867 and 1869. In 1869, 3,041 persons died of cholera. It is worthy of notice that in 1861 when Lahore and other places in Northern India suffered severely, Umritsur appears to have escaped.

Lahore.

LAHORE—Surgeon Major J. B. Scriven, Civil Surgeon, Surgeon T. E. Burton Brown, M.D., Principal of the Lahore Medical College, Assistant Surgeon W. P. Warburton, M.D., Superintendent, Central Prison. The population of the district is 775,551, area 3,647 square miles, contains 1,455 towns and villages.

II. Details of the outbreak.—Omitting four which were registered in the three first months of the year, the first death from cholera was reported at the town of Kussoor on the 4th May. In that month five places in different parts of the district were attacked, and there were 13 deaths. In June four places registered a total of 18 deaths. In July there were 74 deaths in six places. In August, omitting the cantonment of Meean Meer, 39 places were attacked and there were 454 deaths. In September 24 places, and 63 deaths. In October one place furnished one death. In November two, and two deaths. The violence of the outbreak fell chiefly on the Lahore Pergunnah of the district. In Anarkullee, the civil station lying on the outskirts of the city, the first two deaths were reported on the 7th, and another followed on the 8th of May, but they are considered doubtful. Cases continued at intervals till the beginning of August. During that month they were of daily occurrence. The last was on the 3rd of September. In the city, with a population of 85,346, the first death was on the 26th May. The violence of the outbreak here also was in August, and it ceased here on the same day as in Anarkullee. The daily record of deaths for both these places will be given in conjunction with that for the cantonment of Meean Meer. Among European and Eurasian residents at Anarkullee there were 22 cases between the 26th May and 5th September. Doctors Scriven and Brown both remarked that for sometime before the outbreak commenced cases of fever with purging and vomiting had been unusually prevalent.

Notes on outbreaks, Lahore.

III. Importation and communication.—The disease could not be traced to importation. In the Mayo Hospital 45 cases were treated. Each case had one student in close attendance. There were four hospital servants. The professors and 50 students also visited in the wards. None of all these were attacked. Four patients in the hospital were seized. Of these one was in the habit of having his food and water brought from his home in the city and the others are reported to have visited the city against orders. Altogether 945 cases were attended in the city and suburbs, of which 823 were treated in their own houses. There is no evidence that these acted as centres of infection. Sub-Assistant Surgeon Brij Lall Ghose at my request was good enough to prepare a statement showing the distribution of the disease. From this it appears that the 570 cases which were attended in the city were spread over 138 mohullahs or wards. In only 33 instances did more than one occur in the same house. In 28 of these there were two cases in each. In four there were three cases in each, and in the remaining one there were four cases. In one-half of the instances again the cases in the same house occurred either on the same day or with only one day's interval. On the other hand, it is to be observed, that in some of the lanes "the houses are so close together that if they had no separate doors opening on the street they would have been considered as one house."

V. Local conditions.—The city lies on the left bank of the Ravee. The drainage is defective. There are 1,100 public and 300 private wells.

VI. Preventive measures.—Quarantine was attempted between Lahore district and Ferozepore, and also between Meean Meer and Lahore, but it could not be effectively carried out. When cases occurred in the city they were attended and treated by a staff organized for the purpose. On death or recovery the house was disinfected and the person's clothes burned and compensation paid to the owner. For the friendless a hospital was provided. The disease, the Sub-Assistant Surgeon in charge of the arrangement says, was much concealed. The people greatly disliked the cleansing and disinfection of their houses. Not unfrequently, they offered an old bed for destruction instead of the better one which had been used by the sick person! In all the villages, except those near the city, no such measures were taken. In many of these villages only a single death was reported in each.

Lahore Lunatic Asylum.—Contained 273 inmates and the establishment were 50 in number.

No. 66, Lunatic Asylum.

II. Details of the outbreak.—The first case was a female lunatic, who was attacked on the 12th May and died in 14 hours. Another woman was attacked on the 23rd May, a third on the 25th, and a fourth on the 2nd June. Other cases occurred on the 5th, 7th and 8th, one on each day. On the 13th there were two; on the 14th three; on the 15th one; on the 16th four; and on the 17th four; nine others followed at short intervals up to the 30th June. There was then a lull for 15 days when the disease re-appeared and 9 more lunatics were attacked by the 6th August. Altogether there were 39 cases among them and 25 deaths. Of the establishment 6 were attacked between the 16th and 27th June. Six different buildings were attacked and the disease distributed widely over the asylum. On the 26th May two children belonging to the family of a Eurasian who had been formerly employed in the asylum, and who resided in a house within an old native garden lying low and watered by the canal, were attacked simultaneously, and died within a few minutes of each other. A third was attacked the same afternoon and died next morning. On the 27th a fourth child of this family was attacked, and on the 28th one of the servants.

III. Importation and communication.—Although most careful enquiry was made, it altogether failed to trace the first case to importation. The woman had been for two years in the asylum and had not been out of it. So far as could be ascertained, this was the first undoubted case in Lahore. Nor in the course of the outbreak was there any evidence of the disease having spread by infection. None of the attendants on the sick were attacked.

V. Local conditions.—The previous health of the lunatics had been good, and they were very carefully looked after. There was no *overcrowding*, the food was excellent, and the asylum was kept on an excellent state of cleanliness. The *water* was drawn from a well of good repute near the railway station and was carefully filtered. Throughout it was derived from the same source for all those in the asylum. "The filtering material of the filters was not changed during the whole epidemic. The water that the lunatics drank when they returned to the asylum passed through the same sand, &c., as it had passed through before they were moved out." When parties moved out they were supplied from elsewhere. The family in the garden drank from a very filthy well inside.

VI. Preventive measures. Movement.—On the morning of the 8th June the female lunatics, 56 in number, were moved out, and not another case occurred among them till the 28th July. A second followed on the 4th, and the third and last on the 6th August. The

Notes on outbreaks, Lahore.

women were first moved to the leper asylum, three-fourths of a mile distant, and when this was required for a cholera hospital they were transferred on the 19th June to a place near the village of Chintghur, a mile further on. They returned to the lunatic asylum on the 8th August, after two months' absence. On the morning of the 15th June, after 7 cases of cholera had occurred among them, the harmless male lunatics to the number of 149 were moved to Alee Murdan Khan's tomb, close to Chintghur. One of them was attacked immediately on arrival. Four cases followed next day and six more between that day, the 16th June, and the 19th July. All but one were of a mild type and recovered. There was then a lull till the 31st, when one case occurred (it will be remembered that among the women close by there was a case on the 28th). Two others followed, one on the 4th, and the other on the 5th August. The party returned to the asylum on the 13th August. On the morning of the 20th June the criminal lunatics, 50 in number, were moved to the leper asylum which had been vacated the previous day by the women. Five cases had occurred among the criminals, four on the 17th and one on the 18th. After moving they remained free for five days, from the 20th to 26th. On the 26th there was one case, two followed on the 27th and two on the 28th. On this last date the criminals returned to the asylum. No more attacks took place among them.

In all the moves the lunatics left every personal appendage behind them, each individual was bathed and dressed in clean clothes before starting.

VII. Previous history.—In 1869, 44 of the lunatics were attacked, and 33 died of cholera. The outbreak was then attributed by some to the sand used in the filters, which it was supposed had been poisoned by cholera discharges.

Lahore Female Jail.—Contained 150 prisoners.

No. 67, Female Jail.

II. Details of the outbreak.—Among them there was no case of cholera, but Dr. Warburton states that while cholera was prevailing there were several cases attended with cramps, vomiting and purging.

V. Local conditions.—The well from which their water is drawn belongs to a fukeer close by. It is extremely liable to pollution, as there is an enclosure for bathing immediately beside the parapet.

VI. Preventive measures.—No special preventive measures were adopted.

No. 68, Central Prison.

Lahore Central Prison.—Strength when cholera appeared 2,281 prisoners, and a guard of 280 men. The jail consists of two enclosures, the main one with about 1,900 prisoners and a smaller one known as the Gola Serai which contained 369. The general health of the prisoners had been good until a few weeks before the cholera commenced when fever began to be prevalent. On the 21st July the number in hospital altogether was only nine, but it rapidly rose, owing to fevers, to 149 on the 29th. In the middle of August the number was 193. The fever continued extremely prevalent after cholera had disappeared. The guard as well the prisoners suffered from it much.

II. Details of the outbreak.—The first case was on the 14th August, and the second on the 15th August. Five followed on the 16th ; two on the 17th ; five on 18th ; eight on 19th ; six on 20th ; seven on the 21st ; seven on the 22nd ; two on the 23rd ; and then there were two on the 25th, and one on the 27th, or a total of 47, of which 22 died and 25 recovered. In the main enclosure six different buildings were attacked and eight in the Gola Serai at distant points. Of the 47 cases, 26 were admitted from buildings, and 21 from camp, but of these latter nine were from among a party of 100 men who had been sent to cleanse the jail. Diarrhœa was somewhat prevalent. There were 36 cases in August and 24 in September. Among the establishment there was only one case of cholera on the 24th August. Cholera had been for some time in the city, and was severe in the neighbouring villages of Mozung and Ichrah. In Mozung the first case was reported on the 3rd August. Dropping cases continued there till the 11th, when there were four in one day. From the 14th August to the 4th September, between which dates the disease chiefly prevailed, 67 cases and 34 deaths were reported. In Ichrah the first seizure was reported on the 10th and the second on the 13th. Between the 15th and 27th August there were 45 cases and 22 deaths.

III. Importation and communication.—All attempts to trace the first case to importation altogether failed. The prisoner had been in confinement for several years. Nor in the course of the outbreak did Dr. Warburton observe any fact favoring the idea that the disease was spread by contagion. The only case that seemed in any degree to warrant such an inference was that of a prisoner who was attacked after attending one of those ill of cholera. The attendant was seized on the 27th, the man whom he was attending had been attacked on the 22nd. They were friends, and both came from camp where they had lived together. Of the other attendants, about 25 in number, not one was seized.

V. Local conditions.—The jail was in an excellent state as regards cleanliness. There was no overcrowding. All the water used in cooking is drawn from one well. In the main jail the water for drinking and other purposes is taken from a number of wells ; one situated on the line of each divisional wall serves for the two barracks, one on either side. In no instance could the prevalence of cholera be associated with the use of any particular well. In the Gola Serai enclosure there is only one well from which all the inmates drink. The

Notes on outbreaks, Lahore.

contingent guard, 160 in number, whose work lies inside the jail, and who to a great extent drink the same water as the prisoners, had not a single case of cholera.

VI. Preventive measures. Quarantine.—The jail was isolated as much as possible. Great pains were taken to secure this object. Supplies had been laid in to last for some months and the jail establishment were prohibited from going away from the premises and mixing with the outside world.

Movement.—On the morning of the 18th, after seven cases had occurred, the prisoners in the main jail to the number of 1,787 were moved into camp at Shajumal, about a mile and a quarter from the jail. Five fresh cases occurred that day—three at starting, two after arrival in camp. On the next day there were seven more, then followed two on the 20th, three on 21st, four on 22nd, two on 23rd, and one on the 25th. Of these, however, as has been already stated, nine occurred in gangs who were sent daily to disinfect the jail by replastering, *leeping* and fumigating. The prisoners returned on the 14th September. In the Gola Serai there had been 13 cases between the 17th and the 22nd August. On the 23rd they also, to the number of 369 were moved into the camp, and no more were attacked.

When the main jail was evacuated, the bad cases were left in hospital, as they could not readily be moved. Among them and their attendants, numbering in all 71, there were three cases, one on the 22nd, one on the 25th, and one on the 27th.

The inmates of the boys' ward which is completely isolated from the rest of the jail, strength 34, did not move. They had no cases.

Throughout, some 150 prisoners worked daily at the press coming in from the camp in the morning and returning at evening; none of them were attacked. They did not sleep in the jail.

No. 69, Fort.

LAHORE FORT—(Staff Assistant Surgeons W. R. Kerans and J. D. Sainter, Assistant Surgeon Rattray and Assistant Surgeon McCracken)—may be said to form part of the city of Lahore. The garrison consisted of 16 men of the 7th Battery, 13th Brigade, Royal Artillery, the head-quarters of which were at Meean Meer, of 68 men, one woman, and two children of the 37th Regiment from Meean Meer, and of a company of sepoys. There were also four Staff serjeants and their families consisting of two women and four children.

II. Details of the outbreak.—Among the artillery there were no cases. The first was in a man of the 37th on the 16th July. A second followed on the 18th and two more on the 25th. Nearly all the garrison then moved out of the fort to camp at Bheekawal. One man was seized on the way out and another on the 27th. Among the few that remained, there were two cases on the 18th August, one on the 1st and another on the 2nd September, or a total of ten cases among the Europeans. Only two of the sepoys were attacked, one on the 17th and the other on the 23rd August. There were many cases among the followers who number about 250, but no particulars of the dates are recorded. Six different buildings were attacked.

III. Importation and communication.—In the Peshawur Mountain Battery, in which, as already stated, there had been a case of cholera at Meerut on the 12th April,* there was a further seizure at Lahore on the 14th April, when encamped outside the walls of the fort. Dr. Thomson informs me that this was the only case among them at Lahore, and it was the last which occurred amongst them in 1872. The first case could not be traced to importation, nor was there any evidence of infection during the course of the outbreak. Dr. Rattray says "The cases at Bheekawal were distinctly traceable to communication, as they had occupied contiguous beds to one of the men who died from the disease at the fort on the 26th July."

V. Local conditions.—The fort is well raised and the *drainage* good. The men had ample room. The *water* was taken from a branch of the Ravee, as the wells within the fort are not considered so good. In camp they drank from the canal. An ordinary *chattee* filter was taken with them, and fresh sand and charcoal were placed in it on the 27th, when they reached Bheekawal.

VI. Preventive measures. Movement.—The day after the first case occurred, the 16th July, the men of the 37th were moved from No. 1 barrack to Nos. 2 and 3: No. 2 was then partly occupied by the artillery. On the 18th one man was attacked in No. 2. The two cases of the 25th were one from No. 2, and one from No. 3. On the 26th July all the Europeans, both artillery and infantry, excepting 16 men of the 37th, moved into camp at Bheekawal, about 10 miles on the Ferozepore road. One man was seized on the march, another was attacked the following morning, the 27th, and then the disease entirely ceased. Cases however continued among the followers in the fort, and on the 18th August one of the 16 men of the 37th, who had been left behind, and also one of the staff serjeants in the fort were attacked. This detachment had re-occupied No. 2 barrack some days after it had been scraped and fumigated. It was here that the case of the 18th occurred. When it occurred the detachment were removed to the married quarters, and on the 21st they joined the camp. From that date to the 30th of September, when the European Infantry and

---

* *Vide* notes on Meerut No. 33.

Artillery returned, the fort was garrisoned entirely by natives. During the absence of the Europeans two cases of cholera occurred in the fort in a conductor's family, one on the 1st, and the other on the 2nd September.

Notes on outbreaks, Lahore.

VII. Previous history.—The annexed statement shews the statistics of cholera amongst the troops in Lahore and also amongst the prisoners.

Statement of Cholera amongst Troops and Prisoners at Lahore, 1846 *to* 1872.

Year.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1846	European Troops -	1,121	...	...	...	...	1	2	...	2	...	...	...	...	5	...
1848	Ditto „ -	2,534	...	...	1	6	...	5	2	2	1	...	1	...	18	3
1849	Ditto „ -	2,867	...	...	...	1	...	3	...	3	...	1	...	1	9	1
1850	Native Troops -	5,132	1	...	1	5	1	1	...	...	...	...	...	...	9	1
1851	Ditto „ -	5,677	...	1	1	2	1	1	...	1	...	...	1	..	8	1
1852	Ditto „ -	6,829	...	...	...	1	...	...	1	...	1	1	...	...	4	2
	Prisoners -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1856	Ditto -	2,454	...	...	...	...	...	...	1	302	181	...	...	...	484	244
1857	European Troops -	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1†
1858	Prisoners -	2,363	..	...	...	...	...	...	...	2	...	...	...	...	2	...
1859	Ditto -	2,167	...	...	...	...	...	...	...	...	...	...	...	...	2*	...
1861	European Troops -	149	...	...	...	...	...	...	...	39	7	...	...	...	46	29
	Prisoners -	2,101	...	...	...	...	...	...	...	1	...	...	...	...	1	...
1862	European Troops -	154	...	...	...	..	...	...	...	5	4	...	...	1	10	5
	Prisoners -	2,109	...	...	...	...	...	...	1	81	12	...	...	...	94	41
1867	European Troops -	140	...	...	...	...	...	...	2	1	1	...	...	...	4	2
	Prisoners -	2,088	...	...	...	...	...	...	11	...	1	...	...	...	12	9
1869	Ditto -	2,234	...	...	...	...	...	...	...	2	...	...	...	...	2	2
1872	European Troops -	77	...	...	...	...	...	...	6	1	...	...	...	...	7	7
	Prisoners -	2,504	...	...	...	...	...	...	...	47	...	...	...	...	47	22

* Month not specified. † Number of cases not recorded.

Meean Meer.

MEEAN MEER—(Deputy Inspectors General of Hospitals, T. Hastings, Indian Medical Department, and W. G. Trousdell, M.D., British Forces)—the Military station of Lahore, lies six miles to the south-west of it on considerably higher ground. It covers an area of about 12 square miles, the lines of different regiments being far apart, and the buildings widely separated. When cholera commenced the garrison consisted of—

A. Battery, A. Brigade, Royal Horse Artillery.

H. Battery, 8th Brigade, Royal Artillery.

Head Quarters and No. 7 Battery, 13th Brigade, Royal Artillery.

37th Regiment, Foot.

18th Bengal Cavalry.

17th Native Infantry, and the 24th Native Infantry.

The non-military native population residing in the different bazaars and scattered over the station in officer's compounds is estimated at 8,462.

II. Details of the outbreak.—Royal Artillery.—The strength of the artillery and the extent to which each battery suffered from cholera are shown in the following statement:—

A. Battery, A. Brigade, Royal Horse Artillery.

	Strength.	Admissions.	Deaths.
Officers	6	1	1
Men	129	17	14
Women	11	...	...
Children	21	7	3

Notes on outbreaks, Meean Meer.

H. Battery, 8th Brigade, Royal Artillery.

	Strength.	Admissions.	Deaths.
Officers	2	...	...
Men	122	13	8
Women	21	1	...
Children	38	2	1

Head Quarters 13th Brigade, and No. 7 Battery.

	Strength.	Admissions.	Deaths.
Officers	6	...	...
Men	77	14	11
Women	21	4	3
Children	38	3	2

A. Battery, A. Brigade, R. H. Artillery came from Peshawur in February 1872. They had suffered very much from fever there, and the disease continued prevalent among them at Meean Meer. In the Royal Artillery Division generally fever and diarrhœa had increased much by the middle of August when cholera began to prevail. From that date the records are imperfect.

Notes on outbreaks, Meean Meer, No. 70, H-8 Royal Artillery.

H. Battery, 8th Brigade, Royal Artillery—(Staff Assistant Surgeon, J. S. Cogan), was first attacked on the 31st July; a man was seized while on duty on one of the two picquets furnished by the artillery as part of the sanitary cordon round the station. Each of these picquets consisted of three men. The man attacked is said to have had diarrhœa before he went on picquet. He went on picquet that day for the first time. In the afternoon he was brought to hospital in a state of collapse. In this battery no other case occurred till the 15th August, when a man from one of the married quarters was attacked. On the 16th three cases were admitted from No. 4, the barrack in which the man first attacked had lived, and one of these was from the same section of the barrack which he occupied. As he had been brought from the picquet and not from the barrack, even this section had not been vacated. On the morning of the 17th, the main body consisting of—

Officers	2
Men	93
Women	4
Children	8

moved into camp at Soonetta, seven miles south of Meean Meer, on the Ferozepore road. Before going out, there had not been a case among the native establishment of the battery. As soon as they arrived in camp, and throughout the day there were many applications for medicine, some from looseness, others feeling "queer." In the afternoon there were 2 admissions from cholera. Several cases of diarrhœa followed, of which 2 passed into cholera. With these 2 there were 4 entered on the 20th, 3 men and 1 woman, on the 22nd, 1 a child. On the Sunday a man of C-19th (attached to H-8th) was attacked. In this camp at Soonetta there were also 7 admissions and 3 deaths among the native followers. On the 26th, H-8th marched to Doolun, 2¼ miles south-east of Soonetta. On the 26th, a man was seized (he was one of 5 men who had joined from Meean Meer on the 24th) and then a lull till the 16th September when a Native was attacked, and on the 22nd, a Serjeant, the last case. Battery returned to Meean Meer on the 2nd October. The sick, ten in number, went out with A-A, Royal Horse Artillery, on the 16th August.

The main body of the women and children of this battery, numbering 16 women and 29 children, on the 17th August, the same morning as the men of their battery moved into camp, were sent by rail to Hurrapa, 116 miles on the line to Mooltan, along with the 7th Battery, 13th Brigade. On the 22nd August one child was attacked, and this was the only case that occurred amongst them.

III. Importation and communication.—The first case was from the quarantine picquet, but the man had diarrhœa all day before he went on duty there. It could not be traced to importation. So far as is known it was the very first case in the station. Nor could the subsequent attacks be referred to contagion. Of about 40 native attendants, none suffered. In one instance a European attending his brother was attacked. His brother was attacked at 3-30 P.M. of 17th, he was in attendance at 6, and was attacked at noon on the 20th. Both came from different barracks in Meean Meer. In another instance the Serjeant Major's wife was in attendance on another Serjeant's wife. Next day her eldest girl was attacked, but neither she nor her baby in arms, and three other children suffered.

No. 71 A-A, Royal Horse Artillery.

A Battery, A. Brigade, Royal Horse Artillery.—Assistant Surgeon J. Anderson.

II. Details of the outbreak.—The first case was on the morning of the 13th August, a corporal was attacked and died the same day. On the 15th three cases followed, all patients in the same ward of the hospital. Two of them were under treatment for diarrhœa. On the 16th the battery leaving the women and children behind in cantonments marched four miles on the Ferozepore road and encamped at Chundrai. The sick of the whole artillery division, excepting the cholera cases, accompanied it. These included ten of H-8th,

Notes on outbreaks, Meean Meer.

and 9 of 7-13th. That day another patient who had been in the same ward of the hospital as the three men attacked on the 15th, was seized with cholera in camp. On this day also Lieutenant Bumford was attacked. He had been for some time in a bad state of health, and was much exhausted by the heat and work. On the 17th there was one admission from cholera and numerous cases of diarrhœa, two of which became cholera on the following day. That night the battery marched eight miles eastward to Leeda and arrived there at 2 A.M. of the 19th. On that day there were 16 admissions into hospital, chiefly from fever and diarrhœa, three of them were from sunstroke, but none from cholera. On the 21st one case of cholera. At this camp, on the 23rd, the battery was joined by their women and children, of whose history mention will be made presently. On the 25th a married man, who had gone into Meean Meer on the morning of the 23rd to bring his wife and family and returned on the evening of the same day, was attacked. On the 26th there was another case. That evening the battery marched to Bengalee, three miles to the eastward, but on account of want of water had to move four and a half miles to Birkee on the 29th. On the 30th there was a fresh case; on the 2nd of September two, and on the 3rd one, the last of the outbreak among the Europeans of this battery. That evening they marched four miles to Ooderara on the bank of the canal. On the 16th moved to high ground at Khuleera, 18 miles from Meean Meer.

Of four men in cantonments one was attacked on the 27th August. The man had gone in to Meean Meer on the 22nd to bring out his family to camp, but was detained by the illness of one of his children who was suffering from cholera.

When the battery left Meean Meer on the 16th August, the families consisting of eleven women and twenty-one children remained behind. On the 23rd all of them joined the camp at Leeda, but three women and ten children, who were not moved, because the mothers were engaged in nursing children, suffering from diarrhœa which afterwards showed itself to be cholera. None of the women were attacked with cholera, but among the children there were seven admissions between the 18th and 26th August, *viz.*, on—

18th August	1
19th "	2
21st "	1
23rd "	1
25th "	1
26th "	1

None of them were attacked in camp.

Among the native followers, about 250 in number, there were 14 cases of cholera between the 18th August and 9th September. All occurred in camp.

III. Importation and communication.—The first case could not be traced to importation. None of the attendants on the sick attacked with the exception of a man in A-A, who was seized at Birkee camp on the 3rd of September. He had attended Lieutenant Bumford who died on the 22nd August, and when he was seized was attending a fever patient in hospital. Almost simultaneously with this man's attack, another man in the same hospital tent was also attacked. In another instance a man of A-A in camp had had his clothes washed in cantonments and returned. Next day he took them again into wear, and the following day was attacked with cholera. It was said that the washerman who washed them died of cholera, but the date of his death is not stated. The washed clothes came on the 28th. The gunner took them into wear on the 29th and was attacked on the 30th.

No. 72,7-13 Royal Artillery.

7th Battery, 13th Brigade,—Assistant Surgeon W. R. Stewart.

II. Details of the outbreak.—The first person attacked was a woman on the 15th August, and about the same hour a man in hospital. Early on the 16th another man was seized. On the 17th three others were attacked, two men at the Railway station while waiting to start for Hurrupa and another at 9 P.M. after arrival there. On the 18th another woman. No other case occurred in this party excepting a child belonging to H-8th, whose women and children went out with 7-13th, who was attacked on the 22nd. The party remained at Hurrupa, 116 miles from Lahore, till the 24th September and arrived at cantonments on the 25th. Diarrhœa was prevalent before cholera appeared and continued for some days after going into camp.

When the battery left Meean Meer, eight men remained in the cantonment. Of these five were attacked, two on 17th, one on 19th, one on 25th and one on 28th.

In addition there were seven men left belonging to the head-quarters of the brigade. Of these two were attacked.

On the 28th what remained of both these small parties went into camp with a detachment of the 37th Regiment. None of the native followers of this battery were attacked throughout.

In the artillery lines 11 different buildings here and there were attacked. The disease was confined to no particular part.

Notes on outbreaks, Meean Meer.

III. Importation and communication.—The first case could not be traced to importation, nor could the subsequent cases be connected with the first case. None of the attendants on the sick suffered.

No. 73, 37th Regiment.

37th Regiment.—Surgeon J. Ekin, M.B., Assistant Surgeon Rattray, M.D.—The regiment arrived from Shajehanpore and Moradabad in December 1870. At Meean Meer the health of the men had been indifferent.

II. Details of the outbreak.—The strength at the time cholera appeared, excluding the fort detachment and other men absent from head quarters, as well as the number of admissions and deaths from cholera during the outbreak, were as follows :—

	Strength.	Admissions.	Deaths.
Officers	12	...	...
Men	691	91	55
Women	101	9	5
Children	143	24	22
		124	82

Among the native followers who went with the regiment into camp, and who are therefore not included in the general statement of the Staff Surgeon, there were only two cases which occurred at camp Khana. The first case in the 37th Regiment occurred on the 4th August. It did not appear at first to be one of cholera. The man had eaten largely of peas and seemed to be suffering in consequence. About the same time there were three other cases of diarrhœa, which also showed unmistakeable symptoms of cholera on the following day. On this day, the 5th, diarrhœa became prevalent, and one of the patients in hospital was attacked with cholera. These first cases were from buildings in widely different parts of the lines. Taken in chronological order, the cases in the regiment were thus distributed :—

DATE.	ADMISSIONS.		
	Men.	Women.	Children.
August 4th	1	...	...
„ 5th	4	...	1
„ 6th	1	...	...
„ 7th	9	...	...
„ 8th	7	1	...
„ 9th	7	...	3
„ 10th	5	...	2
„ 11th	6	...	5
„ 12th	.	1	4
„ 13th	3	3	2
„ 14th	3	...	...
„ 15th	9	1	...
„ 16th	4	...	3
„ 17th	7	2	2
„ 18th	1	...	...
„ 19th	2	...	...
„ 20th	8	...	...
„ 21st	1	...	...
„ 22nd	...	1	1
„ 23rd	3	...	...
„ 24th	2	...	...
„ 25th	2	...	...
„ 26th	...	...	...
„ 27th	1	...	1
TOTAL	91	9	24

There is no exact record of the number of buildings attacked. Dr. Ekin states that the disease was very widely scattered over the lines, and that hardly a single room escaped.

No diarrhœa was prevalent before the cholera appeared in the regiment. In the week ending 2nd August there was only one admission into hospital from this cause, but it was extremely prevalent during the outbreak. Some of the many cases of this kind were attended with vomiting and cramps, and "were stopped on the verge of cholera by appropriate treatment."

To complete the history of the outbreak, the details of what occurred in the various camps must be considered. The regiment moved from cantonments in four distinct parties, and the history of each will now be separately recorded.

Notes on outbreaks, Mean Meer.

1. *Head Quarter party.*—On the evening of the 5th August, after six cases had occurred in the regiment, the head quarters, composed of 4 officers and 252 men, including nearly all the sick, moved by rail to the temporary barracks at Hullokee, 11 miles to the south-west. On the afternoon of the 6th they were joined by 2 officers and 137 men of the regiment from Meean Meer. This second party brought tents, but before they could be brought from the train unfortunately it began to rain. Only a few of them could be put up. The men were thus overcrowded, the tents, the cots, and bedding in many instances were wet. Some of those in the barrack had no cots. On the 6th there was no cholera, but in the evening of that day diarrhœa greatly increased, and there were numerous applications for medicine. At 12-15 of the morning of the 7th a case of cholera was admitted into hospital, another followed 2 hours after. That day there were altogether seven cases. Diarrhœa continued very prevalent. During that night there were 70 applications for astringent medicine. On the 8th there were five cases. That evening the party moved into tents at Khana, 4 miles nearer to Meean Meer and close to the Railway station of that name. Diarrhœa continued very prevalent. On the 9th there were four cases of cholera. On the 10th four, on the 11th four, on the 12th three, and on the 13th three more. Diarrhœa was not so prevalent. On this last day the party moved into camp at Okara on the Railway, 80 miles from Lahore, and arrived the same day. No further case occurred till the 15th, when there were nine, of which four proved fatal the same day. On the 16th there were three cases, on the 17th five, and the applications for diarrhœa medicine again became numerous. On the 18th there was one case of cholera, on the 19th one, and on the 20th five, but they were of a less severe type, and four of them recovered. On the 21st another case occurred, and the last one in this party followed on the 24th. Twelve women and 12 children joined at Khana on the 12th. No case had occurred in these families before leaving Meean Meer, and none occurred afterwards. In addition a woman came to Hullokee to attend her husband, who was ill of cholera. On the 15th she was attacked there and died.

Water was drawn from wells at each ground. At Hullokee the well had been recently cleared out in preparation for its being required. At Khana and Okara the well used was that of the Railway station. No filters were taken out with this party, but earthen vessels were obtained and made into the usual filter at Okara on the 16th.

2. *Nyaz Beg Party.*—Assistant Surgeon Charles Rattray and Staff Assistant Surgeon W. P. Smith. On the 6th August, at 9 A.M., three officers and 133 men marched to Nyaz Beg temporary barracks, 10 miles distant. There had been two cases of cholera among them before leaving, and several cases of suspicious diarrhœa occurred on the way out. On the 7th four cases of diarrhœa were admitted into hospital and two of cholera. On the 8th there were nine admissions from diarrhœa, and there were two more cases of cholera, and then the disease ceased entirely. These four cases of cholera at Nyaz Beg all occurred in one of the two barracks. On the 8th it was vacated, and the inmates moved into camp. On the 11th five women and three children joined from the Shalimar party, to be presently referred to. These families had had no cases of cholera before they came to Nyaz Beg, and none followed. The whole party remained in their temporary quarters till the 25th September, and then returned to cantonments.

Water was drawn from the canal close by. The party took with them two Macnamara filters from the hospital, all ready charged, and no change was made either in the sand or charcoal during their stay at Nyaz Beg.

3. *The Families.*—Assistant Surgeon Charles Rattray.—On the evening of the 6th the main body of the married people, consisting of 56 men, 85 women, and 116 children, moved 3 miles to Shalimar. Some were encamped outside, and some were accommodated in a house within the gardens. Before moving they had had only one case among them, a child attacked on the 5th. On the 7th there was no case. On the 8th a woman was attacked. On the 9th three children of different families. On the 10th, two more children from different families. On the 11th five from different families. On the 12th four children and one man. The party then moved the same day to camp at Chunga Munga, 44 miles on the Mooltan line of rail. On the way one woman was attacked. On the 13th two women. On the 14th two men and two children. On the 16th one man and one child. That day they shifted ground a few hundred yards. On the 17th a child was attacked, and on the 23rd a man, the last case. The party returned to cantonments on the 21st September. Two Macnamara filters were taken with them, which had been in use at Shalimar. These filters are said to have been cleaned on the 31st July, and not to have been opened again till the 21st August, when the cholera had ceased.

4. *The Gogaira Party.*—Staff Assistant Surgeon George Shaw.—On the 26th August, one officer, 84 men, 15 women, and 24 children, joined on the 27th by some of the Artillery, moved by rail to Gogaira, 87 miles on the Mooltan line, and encamped near

Notes on outbreaks, Meean Meer.

the station of Chuneewal; only *one* case occurred among them after leaving cantonments—one of the Artillery on the 28th. Two followers also suffered, but the dates of these two attacks are not given. They took with them and used a Macnamara filter, all ready charged, as it had been in barracks.

5. *Party left in cantonments.*—Staff Assistant Surgeon W. H. Climo, M.D.—On the 6th there were four cases in cantonments. Before the last detachment left on the 27th August, the strength in cantonments consisted of 3 officers, 101 men, 20 women, and 36 children. Among them, between the 9th and 27th August, 27 cases occurred. Dr. Climo gives the number as 35, *viz.*, 19 men out of an average of 93, 4 women out of 17, and 12 children out of 26. Of the 35, 26 were fatal. According to these figures the attacks were in the proportion of 25 per cent. of strength. Dr. Ekin states that of 82 men 17 were attacked and 11 died, of 16 women 4 were attacked and 2 died, and of 26 children 5 were attacked and all 5 died.

From time to time as buildings were attacked, the inmates were removed to cantonments on the parade ground, until ultimately the whole of the small party left in cantonment was in camp. Among the party left behind in cantonments after the 27th August, consisting of 2 officers, 17 men, 5 women, and 12 children, no further seizures occurred, but many of these remained because they were already suffering either from diarrhœa or cholera.

III. Importation and communication.—The punkah-coolies were at work, and in spite of the cordon round the station many people must have passed in daily, but the disease could not be traced to importation. In the whole course of the outbreak only one case occurred, which might perhaps be construed as having been due to communication. The first man attacked before his symptoms were recognized as those of cholera was treated in an inner verandah of the hospital. Within a few feet of this spot, a man in the ward, who had been long under treatment, was attacked with cholera next day, the 5th August. At the same time it is to be noted that another patient, who also had been some time in hospital, was attacked on the 6th in another ward. The place where the first case had been treated had been carefully cleansed and disinfected. Every case of cholera had three or four native attendants. Of these, so far as is known, only two were seized with cholera. They were attacked about the same day at Khana. Frequent changes, however, took place in these men, and the subsequent history of those who left was not traced.

No. 74, 18th Bengal Cavalry.

18th Bengal Cavalry.—Surgeon G. K. Poole.

II. Details of the outbreak.—There were only three cases in this regiment, one on the 27th August, one on the 29th, and one on the 30th; only the first was fatal. Among the followers four cases, one on each of the following dates, August 27th, 29th, 30th, and September 13th.

III. Importation and communication.—The man first attacked "is supposed (against order) to have gone to Lahore the evening before he was attacked." "A patient suffering from fever was the next attacked. This man occupied the bed next to the one where the cholera patient was put by a mistake of the Native Doctor. The third sowar attacked had been in attendance on the first cholera patient." This third man was attacked in camp, the only case there. In the account of the movement it is said that "this man had been looking after his comrade who was the *second* man attacked, making the third case among the sowars. Another strange fact is this, that the first case among the camp-followers was that of a barber, who shaved one of the men in attendance on the sowar first attacked." No dates are given.

VI. Preventive measures.—On the 28th August, the regiment, leaving about one-third of their number for duty in cantonments, moved into camp at Dhoree, 9 miles to the east of cantonments, and remained there till the 1st October. None of the men left in cantonments were attacked, but two cases occurred among the camp-followers there.

No. 75, 24th Native Infantry.

24th Regiment Punjab Infantry.—Assistant Surgeon H. Linton.—Strength, officers 5, men 536, women 61, children 50.

II. Details of the outbreak.—*First case* occurred on the 14th August. Between that day and the 3rd September there were eight cases among the men and eight among the followers, distributed thus:—On the 14th two, 15th one, 17th one, 18th one, 22nd three, 24th two, 25th one, 26th one, 27th one, 29th one, 30th one, September 3rd one, or a total of 16. Of these the one on the 17th occurred in the fort as already mentioned. The regiment came from Rawal Pindee in 1870, and had been in good health. Diarrhœa had not been prevalent among the men before cholera appeared, nor did it become so while the outbreak lasted. On the 15th August the regiment moved into camp, one-fourth of a mile west of the lines. The five cases among the sepoys that occurred after that day were in camp, but the men were employed much in the station all the time.

Notes on outbreaks, Meean Meer.

III. Importation and communication.—The first three cases occurred among sepoys, who had formed portion of a fatigue party employed in striking tents at Shalimar, which had been used by the married people of the 37th. These families had suffered severely from cholera at Shalimar, as has been already detailed, and had abandoned the place on 12th August. On the 13th the fatigue party of the 24th Punjab Infantry, consisting of 100 men, went to Shalimar at 4 A.M., and were busily employed in striking the tents until 6 P.M. All this time they were without food. Immediately on their return two of them were attacked with diarrhœa, which rapidly assumed all the symptoms of cholera; another man of this party was afterwards attacked; all three died. The other sepoys who suffered from cholera recovered. Neither the first case nor the subsequent ones were traceable to infection. Each of the sepoys had eight comrades to attend him in turns, so that 64 of them were brought in immediate contact with the sick; not one of them got cholera nor did any of the hospital establishment.

No. 76, 17th Native Infantry.

17th Regiment Native Infantry.—Assistant Surgeon L. E. Eades.—Strength at Meean Meer, officers 5, men 350, followers 300.

II. Details of the outbreak.—The first case was that of a follower on the 15th August; on the 16th August a sepoy was attacked. Between the 15th August and the 2nd September there were in all 19 cases, distributed as follows:—On the 15th one, on the 16th one, on the 17th one, on the 19th one, on the 22nd one, on the 25th two, on the 26th three, 27th three, on the 30th one, 31st three, September 2nd two. In addition there was another in the fort detachment on the 23rd August. Diarrhœa was never prevalent. On the 26th regiment moved into camp, about 600 yards from the lines. On the next day there were three cases, and on the 28th a change was made to Teera, a place 4 miles off. On the 31st there were three more cases; the camp was shifted to Tulseepore on the 1st September; then on the 2nd there were two more. Only one case among the followers occurred; this was at Teera on the 30th.

III. Importation and communication.—No importation of the disease could be traced, nor was there any evidence of contagion. Of 18 attendants on the sick none were attacked. Nos. 3 and 4 Companies suffered most.

Among the Europeans who have not been included in the regimental statements already given, a few were attacked. The facts, so far as they are known, may be best given in chronological order. On the 8th August diarrhœa was prevalent in the military prison. On the 11th "a large number of cases admitted into hospital with diarrhœa and one prisoner with cholera." On the 19th the Provost Sergeant attacked. On the same day the wife of a Commissariat Sergeant and child attacked.

Meean Meer Bazars, &c.—Among the natives in the bazars, officers' servants and others, 178 cases of cholera have been recorded, but the dates of occurrence of only 144 of these are given. Of the 178 cases 115 were fatal. The first occurred on the 1st August, and the last on the 6th September. The period of greatest prevalence was from the 11th to the 29th August, between which dates 119 of the 144 occurred. The disease was not confined to any particular locality. It occurred in all the bazars more or less, and in many of the officers' compound. The *first* case was in a man in the sudder bazar, who had arrived from down country on the 29th July. He was attacked on the 1st August. In the village of Meean Meer, which lies near this bazar, there had been a case on the 29th July. There were two more on the 31st July. The only other villages in the immediate vicinity of cantonments from which cholera deaths have been reported were Bagbanpura near the Shalimar gardens, where one was registered on the 11th August; Gunge near the cattle-yard, where there was one on the 23rd, and Keer, near the Artillery lines, where there were 31 between 22nd and 30th August, and one on the 6th September.

III. Importation and communication.—In none of these cases has any evidence of importation been adduced, nor in the course of the outbreak among the native population of cantonments did Dr. Climo, the Staff Surgeon, see any evidence of spread from one case to another. Of two Native Doctors and eight servants belonging to the Cholera Hospital one was attacked. The sick were generally attended by friends. So far as is known none of them suffered.

Summary of the facts regarding the outbreak at Lahore and Meean Meer.—The annexed statements show the daily incidence of the disease as it affected the different communities. In the first of them, embracing the period from May to July, it was confined to the city and its vicinity. In the second, commencing with the 31st July and ending with the termination

Notes on outbreaks, Meean Meer.

of the outbreak, Meean Meer, the various camps, and the central prison were also included :—

Cholera at Lahore, 1872, *May to July.*

Date.	Lahore City.	Fort Lahore.	Anarkullee.	Lunatic Asylum.	Date.	Lahore City.	Fort Lahore.	Anarkullee.	Lunatic Asylum.
May 1	...	...	...	...	Jun 16	...	...	2	5
,, 2	...	...	...	...	,, 17	...	...	2	4
,, 3	...	...	...	...	,, 18	...	...	...	2
,, 4	...	...	...	...	,, 19	...	...	...	...
,, 5	...	...	...	...	,, 20	...	...	...	...
,, 6	...	...	...	...	,, 21	1	...	...	...
,, 7	...	...	2	...	,, 22	...	...	...	1
,, 8	...	...	1	...	,, 23	...	...	...	...
,, 9	...	...	...	...	,, 24	...	...	...	...
,, 10	...	...	...	...	,, 25	1	...	...	1
,, 11	...	...	...	...	,, 26	...	...	...	4
,, 12	...	...	...	1	,, 27	...	...	...	3
,, 13	...	...	...	...	,, 28	...	...	...	2
,, 14	...	...	2	...	,, 29	...	...	...	...
,, 15	...	...	...	...	,, 30	...	...	...	1
,, 16	...	...	...	...	July 1	...	...	...	...
,, 17	...	...	...	...	,, 2	1	...	...	...
,, 18	...	...	...	...	,, 3	2	...	...	...
,, 19	...	...	...	...	,, 4	1	...	...	...
,, 20	...	...	...	...	,, 5	...	...	...	...
,, 21	...	...	...	...	,, 6	1	...	...	...
,, 22	...	...	...	...	,, 7	...	...	...	...
,, 23	...	...	...	1	,, 8	1	...	1	...
,, 24	...	...	...	...	,, 9	...	...	...	...
,, 25	...	...	2	1	,, 10	2	...	...	...
,, 26	1	...	...	...	,, 11	...	...	...	...
,, 27	...	...	...	...	,, 12	2	...	...	...
,, 28	...	...	...	...	,, 13	...	...	1	...
,, 29	...	...	...	...	,, 14	1	...	5	...
,, 30	...	...	...	...	,, 15	...	...	...	1
,, 31	...	...	...	...	,, 16	1	1	2	...
June 1	...	...	...	...	,, 17	2	...	...	...
,, 2	...	...	...	1	,, 18	2	1	...	...
,, 3	2	...	...	...	,, 19	...	...	2	2
,, 4	...	...	...	...	,, 20	1	...	...	...
,, 5	1	...	...	1	,, 21	2	...	2	...
,, 6	...	...	2	...	,, 22	2	...	...	...
,, 7	...	...	...	1	,, 23	1	...	2	...
,, 8	...	...	...	1	,, 24	4	...	1	...
,, 9	...	...	...	...	,, 25	5	...	3	...
,, 10	...	...	...	...	,, 26	2	3	3	...
,, 11	...	...	...	...	,, 27	2	1	...	...
,, 12	...	...	...	...	,, 28	2	...	2	1
,, 13	...	...	2	2	,, 29	2	...	2	...
,, 14	...	...	2	3	,, 30	3	...	1	...
,, 15	...	...	1	1	,, 31	1	...	...	1

Notes on outbreaks, Meean Meer.

Statement of Cholera at Meean Meer, at the Camps, in Lahore, &c., from 31st July, the date of the first case at Meean Meer.

		H-8 R. A.				A-A R. H. A.				7-13 R. A.				87th Regiment.*					18th Bengal Cavalry.	17th Native Infantry.	24th Punjab Native Infantry.	Natives, Meean Meer Bazars, and compounds.	Lahore City.†	Fort Lahore.	Anarkullee.†	Lunatic Asylum.	Central Prison.
		Cantonment.		Camp.		Cantonment.		Camp.		Cantonment.		Camp.		Cantonment.	Head Quarter Camps Hullokee, Khana, and Okera.	Camp Nyaz Beg.	Families' Camps, Shalimar and Chunga Munga.	Camp Gogaira.									
		Europeans.	Native Followers.	Europeans.	Native Followers.	Europeans.	Native Followers.	Europeans.	Native Followers.	Europeans.	Native Followers.	Europeans.	Native Followers.														
July	31	1	...	...	...	...	...	...	...	...	None.	...	None.	...	...	...	...	...	...	...	...	...	1	...	...	1	...
August	1	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	1	2	...	2	...	...
,,	2	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	4	...	2	...	...
,,	3	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	6	...	2	...	...
,,	4	...	...	...	...	...	...	...	...	...		...		3	...	...	...	...	...	...	...	1	6	...	4	2	...
,,	5	...	...	...	...	...	...	...	...	...		...		3	...	...	...	...	...	...	...	...	3	...	4	1	...
,,	6	...	...	...	...	...	...	...	...	...		...		1	...	...	...	...	...	...	...	1	6	...	3	1	...
,,	7	...	...	...	...	...	...	...	...	...		...		...	7	2	...	...	...	...	...	...	7	...	3	...	...
,,	8	...	...	...	...	...	...	...	...	...		...		1	5	2	1	...	...	...	...	...	12	...	2	...	...
,,	9	...	...	...	...	...	...	...	...	...		...		1	4	...	4	...	...	...	...	1	4	...	5	...	...
,,	10	...	...	...	...	...	...	...	...	...		...		...	4	...	8	...	...	...	...	2	7	...	5	...	...
,,	11	...	...	...	...	...	...	...	...	...		...		2	4	...	5	...	...	...	...	4	15	...	4	...	...
,,	12	...	...	...	...	...	...	...	...	...		...		...	3	...	8	...	...	...	...	7	18	...	3	...	...
,,	13	...	...	...	...	1	...	...	...	...		...		1	3	...	3	...	...	...	...	1	6	...	1	...	...
,,	14	...	...	...	...	...	...	...	...	...		...		1	...	...	2	...	...	...	2	5	4	...	4	...	1
,,	15	1	...	...	...	3	...	...	...	2		...		...	12	...	...	...	...	1	1	3	18	...	5	...	1
,,	16	3	...	...	...	...	...	2	...	1		...		3	1	...	2	...	...	1	...	5	13	...	1	...	6
,,	17	...	...	2	...	...	...	1	...	4		1		4	5	...	1	...	...	1	1	14	9	1	1	...	2
,,	18	...	...	...	...	1	...	2	1	2		1		...	1	...	...	...	...	...	1	10	9	2	2	...	5
,,	19	...	...	...	1	2	...	...	...	1		...		1	1	...	...	...	...	1	...	7	25	...	3	...	8
,,	20	...	...	4	...	...	...	...	...	...		...		3	5	...	...	...	...	...	...	3	9	...	4	...	6
,,	21	...	...	...	4	1	...	1	1	...		...		...	1	...	...	...	...	...	...	1	16	...	1	...	7
,,	22	...	...	2	...	...	...	...	...	...		1		2	...	...	1	...	...	1	3	7	5	...	2	...	7
,,	23	...	...	...	...	1	...	...	1	...		...		2	...	...	...	...	...	...	...	8	7	1	3	...	2
,,	24	...	...	...	2	...	...	...	1	...		...		2	1	...	...	...	...	...	2	7	4	...	4	...	...
,,	25	...	...	...	...	1	...	1§	1	1		...		1	...	...	...	...	...	2	1	5	13	...	3	...	2
,,	26	...	...	1‡	...	1	...	1	2	...		...		...	...	...	...	...	...	3	1	4	5	...	7	...	...
,,	27	...	...	...	1	1	...	...	1	...		...		2	...	...	...	...	1	3	1	3	4	...	2	...	1
,,	28	...	...	...	1	...	...	...	...	1		...		...	...	...	...	1‖	1	...	...	9	3	...	6	...	...
,,	29	...	...	...	1	...	...	...	1	...		...		...	...	...	...	...	...	...	1	16	5	...	8	...	...
,,	30	...	...	...	...	...	...	1	...	...		...		...	...	...	...	...	1	1	1	2	...	...	2	...	...
,,	31	...	...	...	...	...	...	...	2	...		...		...	...	...	...	...	...	3	...	3	1	...	2	...	...
September	1	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	3	4	1	...	...	...
,,	2	...	...	...	...	...	...	2	1	...		...		...	...	...	...	...	...	2	...	5	1	1	1	...	...
,,	3	...	...	...	...	...	...	1	1	...		...		...	...	...	...	...	...	...	1	1	2	...	3	...	...
,,	4	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	2	...	...	...	...	...
,,	5	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	2	...	...	...	...	...
,,	6	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	1	...	...	...	...	...
,,	7	...	...	...	1	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	8	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	9	...	...	...	...	...	...	...	1	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	10	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	11	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	12	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	13	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	14	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	15	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	16	...	...	...	1	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	17	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	18	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	19	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	20	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	21	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	22	...	...	1	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	23	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	24	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	25	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	26	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	27	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	28	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	29	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	30	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
October	1	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	2	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	3	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	4	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	...	...	...	...	...
,,	5	...	...	...	...	...	...	...	...	...		...		...	...	...	...	...	...	...	...	...	1¶	...	...	...	...

* Not including the detachment at the Lahore Fort.

† Deaths only.

‡ Came from Meean Meer on the 24th.

§ Had returned from Meean Meer 36 hours previous.

‖ An Artillery man belonging to the small detachment of his Regiment who joined this camp.

¶ One followed on 15th November.

Notes on outbreaks, Meean Meer.

IV. Meteorology.—Dr. Cogan states, "on the 1st August heavy rain fell in the afternoon, and a severe thunderstorm with lightning passed over the station. There was unusual rain-fall this year, and at times the weather was very oppressive. The wind was usually from the east, but for the most part, the atmosphere was perfectly still, and charged with electricity." Dr. Anderson corroborates the statement that "during the epidemic easterly winds prevailed for the most part." Dr. Stewart also says that "the wind was easterly as a rule." Dr. Ekin observes, "in July the fall of rain was much above the average, being about 6·50* inches, and the atmosphere and earth were loaded with moisture. The prevailing winds were south-east and east, and I may add that flights of locusts were numerous this month." Dr. Climo appends to his report a statement prepared by Major Basevi of the Bengal Staff Corps, in which the rainfall and temperature at Meean Meer in 1872 are compared with those of the two previous years:—

Statement showing the rainfall and temperature at Meean Meer in 1872, *compared with those of* 1870 *and* 1871.

YEAR.	Total rain-fall of first seven months of each year.	Rain-fall in June.	Rain-fall in July.	Rain-fall in August.	Mean temperature of first seven months of each year.	Mean temperature of June.	Mean temperature of July.	Mean temperature of August.	Prevailing wind in July	REMARKS.
1870 ...	4·20	1·20	2·40	†1·725	77·51	93·35	95·8	†85·6	18 days easterly	† For first fifteen days of August 1870 only; record not kept for the remainder of month.
1871 ...	11·225	3·15	5·45	·150	75·80	89·65	88·4	88·45	17 days easterly	Little variation in barometer for July in each year.
1872 ...	14·425	·45	10·525	6·275	76·26	94·	85·9	85·8	21 days easterly	

V. Local conditions.—The drainage of the artillery lines is variously spoken of. Dr. Anderson says it is most defective. Dr. Stewart, on the other hand, states that it is fairly good. It appears, however, to be a fact, that after a heavy fall of rain, such as there often was in 1872, the ground remains for one or two days more or less under water. In the European Infantry lines also water lodges for a time after heavy rain. To the native lines the same remark applies.

For the artillery the *drinking water* was brought from the canal branch which runs through cantonments. The water barrels, which are conveyed in carts, are filled from the canal by means of the ordinary native leather "doles" which are dipped into it, and the water is distributed from the barrels by "mussucks" out of which the filters are supplied; these filters are the ordinary "chatty" filters—three earthen vessels placed one above the other, the lowest of which serves as a reservoir, and the upper two, charged with sand, gravel, and charcoal, constitute the filter. Great care was taken that the canal, and not the well water was used for drinking. The 37th Regiment drank also from this canal branch; they were provided with Macnamara filters. The whole regiment drank from them except the few men on guard. The sand for the filters is supplied by the Commissariat, and it is not known from what source it is obtained. In the 37th Regiment, the sand, charcoal, &c., of the filters had not been changed for six months, when the outbreak commenced. This canal cutting from which the European troops are supplied is a branch of the Baree Doab Canal. The Canal Officer informs me that during the outbreak "10 or 12 cubic feet per second may be said to have been running through the rajbuha or cantonment branch." It is an open stream, the edges are raised so that no surface drainage can enter it. At the same time it is no doubt liable to pollution. People may wash in it when unobserved against orders, and not long before my visit, a dead body was found in it in an advanced stage of putrefaction. The point where it approaches nearest to the bazar is nearly half a mile distant from it. The Canal Officer is of opinion that the water does not stagnate at the syphons, where it is drawn for the use of the troops. At each camp occupied by the European troops they drew water from a fresh source. As a rule, filters were used, and the filtering material changed each move that was made.

The native troops did not use the canal water. They all drank from wells, of which there were several in the lines of each regiment. In none of them could the cases of cholera which occurred be connected with the use of any particular well. The natives in the cantonment all drank from wells. They are numerous in all parts of the bazaar. Every compound has its well, and the people residing in each, as a rule, drink from the well it contains.

There was no *overcrowding* of either European or native troops.

---

* Major Basevis' register given further on shows 10·5 inches for July.

Notes on outbreaks, Meean Meer.

VI. Preventive measures.—Movement.—The different movements made by the troops to avoid confusion have been already detailed in the history of the outbreak as it affected each regiment. In regard to this point, it may be added that the long journey by rail during the day was found to be very trying. Several cases of sun-stroke occurred, both during the moves and in camp. In one instance it was considered advisable to leave a man suffering from sun-stroke at Montgomery, but the civil authorities objected on account of the danger of his bringing cholera into the station, which they believed would be incurred, were he allowed to remain, and he was therefore taken on. In spite of the great heat at Hurruppa, Dr. Stewart is of opinion that the general health of this party improved by the change. Both during and after the cholera, fever was extremely prevalent in the garrison, but there is no evidence to show that it was increased by the exposure. The general population both of Lahore and Meean Meer who had not been in camp suffered from it severely.

Quarantine.—On the 22nd July, ten days before any case of cholera had occurred in Meean Meer, a cordon of 44 sentries was posted around the cantonment to keep out cholera. The strength of guards mounted daily for this cordon, exclusive of the Non-Commissioned Officers and men from the Artillery and 37th Regiment, was 18 Non-Commissioned Officers and 132 native troopers, sepoys and police. Europeans were allowed to come and go as they liked, but the orders were that no native was to enter the cantonment without a pass, or without being able to prove that he was employed on urgent public business. The grass cutters of the Artillery and Cavalry and of the officers of the garrison went in and out daily. Up to the 7th August when the cordon was withdrawn, 528 passes had been issued. Practically, communication could not be stopped. Supplies came from without. Ice came in daily. The quarantine was in fact merely nominal. Once cholera had appeared in the bazars, the soldiers were not allowed to visit them.

Separation of cases.—The rules regarding the isolation of cases and the disinfection of all discharges, &c., were observed. Cases occurring in the bazars were removed to a temporary hospital. The measure caused much discontent among the people and specially among the upper classes. Many of the inhabitants left from fear of the cholera and also of the restrictive measures. It was arranged after a time that any one who could provide a tent for his sick relation or friend might do so and have it placed near the cholera hospital, but this was not done in any instance. The patients were all of the poorer orders.

VII. Previous history.—The annexed statement shows that for four years Meean Meer had been quite free from cholera, and also that the outbreak of 1872, severe as it was, was still very mild in its results compared with the terrible experience of 1856 and 1861, in the first of which years 501 out of 1576 European soldiers and in the second 725 out of 1,700 were attacked.

Statement of Cholera at Meean Meer, 1852-1872.

Year.		Average Strength	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1852	European Troops -	...	...	...	...	...	..	...	...	...	...	1	...	...	...	1*
1853	European Troops -	...	..	...	...	1	...	...	...	...	...	...	...	..	...	1
	Native „ -	6,926	...	...	...	...	2	...	...	...	...	...	...		2	...
1854	Native Troops -	...	1		1	...	...	1	1	...	...	...	...	...	4	..
1856	European Troops -	1,576	...	...	...	...	...	...	...	435	65	1	...	...	501	273
	Native „ -	3,024	...	...	...	...	...	1		51	53	...	...	...	105	42
1858	Native Troops -	...	...		..	...	3	1	...	2	...	...	...	...	6	1
1859	European Troops -	2,044	1	...	.	...	...	...	...	...	...	...		...	1	...
1860	European Troops -	2,036	...	...	...	...	...	3	...	..	...	...	1	...	4	2
1861	European Troops -	1,700	...	...	...	.	...	...	...	661	64	...	...	...	725	450
	Native „ -	694	...	...	...	...	...	...	...	38	2	1	...	...	41	16
1862	European Troops -	1,362	...	...	...	...	1	...	...	87	38	2	...	...	128	68
	Native „ -	614	...	...	...	...	...	...	1	5	5	...	...	...	11	6
1864	European Troops -	910	...	...	...	...	1	...	...	..	..	...	...	...	1	1
1867	European Troops -	1,030	...	...	...	...	6	8	62	10	...	...	...	...	86	52
	Native „ -	1,324	...	...	...	1	...		11	1	...	...	..	...	13	5
1872	European Troops -	1,358	...	...	...	...	...	...	1	179	5	...		...	185	123
	Native „ -	1,267	...	...	..	...	...	...	..	19	6		...	...	25	12

* Only deaths recorded.

No. 77, Goojranwalla.

GOOJRANWALLA —*Sub-Assistant Surgeon Bose.*—The district which lies immediately to the north of Lahore has an area of 2,656 square miles and a population of 550,576. It contains 1,114 towns and villages.

II.—Details of the outbreak.—The first known case of cholera occurred in the village of Khokarkee, a mile and a half distant from the town of Goojranwalla, on the 8th June. Between the 8th and the 13th, four more persons died of cholera in this village. The Mortuary Register shows 5, but I shall adhere to the account given by Dr. Bose. From no other place in June was any case reported except at the village of Maug in a remote part of the district where a death from cholera is registered on the 28th, but the Sub-Assistant Surgeon states that this was subsequently found not to have been due to cholera. In July not a case was known of. In August, 10 different places were attacked, and 155 deaths occurred, the first being on the 16th. In September, 8 places suffered, of which 5 were then attacked for the first time, and three continued to suffer from August. The total deaths from cholera in the month were 171. In October there were 17 deaths. They were confined to two places, both of which had previously escaped. The last death recorded was on the 22nd October.

Notes on outbreaks, Goojranwalla.

The towns of Goojranwalla and Wuzeerabad suffered most. Both places are on the trunk road, the distance between them being 19 miles. The course of the disease in them is indicated by the deaths registered as follows:—

		Goojranwalla. Population 19,381.	Wuzeerabad. Population 15,653.
August	16th	1	0
,,	17th	1	0
,,	18th	4	0
,,	19th	3	1
,,	20th	5	2
,,	21st	2	1
,,	22nd	2	2
,,	23rd	2	0
,,	24th	6	4
,,	25th	7	5
,,	26th	9	3
,	27th	7	6
,,	28th	11	7
,,	29th	12	5
,,	30th	16	11
,,	31st	4	7
September	1st	10	5
,,	2nd	5	9
,,	3rd	5	6
September	4th	7	12
,,	5th	0	8
,,	6th	5	6
,,	7th	4	4
,,	8th	8	5
,,	9th	2	2
,,	10th	5	2
,,	11th	4	1
,,	12th	3	0
,,	13th	2	1
,,	14th	0	1
,,	15th	0	3
,,	16th	0	1
,,	17th	0	1
,,	18th	0	0
,,	19th	0	0
,,	20th	1	0
,,	21st	0	0
,,	22nd	1	0

In the Goojranwalla Jail, out of 500 prisoners one was attacked on the 19th August. The case could not be accounted for.

III. Importation and communication.—It is believed that the first case, that in the village of Khokarkee, was imported and caused the few others which occurred immediately afterwards. It is further believed that the medium* of spread was the water of the well which was used by the persons first attacked, and that the disease was cut short by closing this well. The particulars are as follows. The man first attacked was Doony Chund who returned on the 8th June from Jummo where cholera is said to have been prevalent. He was seized on his way back on the 8th. On the 11th one case followed, on the 12th two, and on the 13th one. In reply to further enquiries, Dr. Bose informs me that "of the four subsequent cases with the exception of No. 3, there is no evidence to shew that any actual communication existed between these four cases and the first case. The village, however, is so small and the houses are situated so close to each other that it is not improbable that communication may have existed, especially in an indirect manner, through the relatives of the first case or through those who had come to see Doony Chund at the time of his illness. It may also be mentioned that of the four subsequent cases, three were known to have confessed to having drunk of a well which is situated only 6 feet from Doony Chund's house, and close by which the clothes which he had on him while sick were said to have been washed."

In this very village it is to be observed that on the 23rd and 24th August four cases of cholera occurred, of which 2 were fatal. No well was closed, and yet the disease again ceased. The cases, it is said, were isolated and their clothes, &c., disinfected. Several other instances are cited in which cholera is believed to have been imported, but the facts are either very vague or they merely amount to this—that persons coming from places where cholera was prevailing were attacked very shortly after arrival. There is no evidence that they spread the disease. In the town of Goojranwalla the Assistant Commissioner informed me that the first cases appeared in totally different quarters. In both Goojranwalla and Wuzeerabad the sick were treated in their own houses. There is no fact to lead to the suspicion that they acted as centres from which the disease spread.

V. Local conditions.—Near Goojranwalla there is no river or canal, and the people obtain their water exclusively from wells of which there are 66 in the town. In the town of Wuzeerabad there are 219 wells from which the drinking water is principally drawn. A very small proportion of the population use the water of the "Palkoo" stream.

VI. Preventive measures.—Police cordons were established at three different points of greatest traffic in the district, but no strict quarantine could be kept. The Grand Trunk Road passes through the district, and along this the mails and all the numerous European travellers, passed in dâk carriages unmolested. Six of the 23 places attacked were isolated. A police cordon was drawn around them,and no one was allowed to come in or go out. The houses attacked were disinfected, and the clothes, bedding, &c., of those who suffered were boiled in a solution of sulphate of iron.

Notes on outbreaks, Goojranwalla.

Nominally disinfectants were employed at 17 places. Of these, Goojranwalla town is mentioned as one, but when as many as 20 cases occurred in one day, the measures could not be effectually carried out. In Goojranwalla town an attempt was made at first to stay the outbreak by shutting the wells which had been used by those who were attacked, but as the measure gave rise to great dissatisfaction, and as the disease soon showed itself generally throughout the town, they were re-opened; six places are mentioned in which no disinfection was employed. They were: Nizamabad, in which there were eleven cases; Mundyala, four cases, Durgahee Walla, one case; Sankee, one case; Sadogura, two cases; and Dhola, one case.

No. 78, Goojrat.

GOOJRAT.—*Honorary Assistant Surgeon R. J. Quinnell.*—The district lies next to Goojranwalla on the north-west; it has a population of 616,347, and an area of 1,900 square miles. The towns and villages number 1,429.

II. Details of the outbreak.—According to the police reports, one death from cholera was registered in each of the first three months of the year. There was one death in May, but none in June. In July 2; in August 27, and in September 35. In August, deaths from the disease were reported from 13 villages or towns, and in September from an equal number. In the town of Goojrat, with a population of 15,907, two deaths only were reported, one in May and one in August.

III. Importation and communication.—According to the Civil Surgeon's report there was no case in the district till the 3rd August, when a Mahomedan priest, who returned from Lahore on that very day, was taken ill immediately on arrival at the village of Futtehmusa, and died on the 6th. "On the 7th no less than ten persons were attacked, most of whom were friends of the deceased, and had remained present with him during his illness." On enquiring exactly how many of these ten persons had been with the deceased after his attack, Dr. Quinnell states,—"The ten persons attacked on the 7th were amongst those who had assembled at his house to welcome him, and they afterwards took part in attendance upon him during his three days' illness." At Koonjah, a town of about 6,000 inhabitants, also the disease is believed to have been brought by a Bunneah from Jummoo. He returned on the morning of the 25th August, was seized the same night, and died the following day, the 26th. Between that and the 1st September twelve people, all of the one mohulla to which the disease confined itself, were attacked, and of this number only two escaped. The Police Returns, however, do not agree with this statement, and show three deaths from cholera on the 26th. At Khallas again, a remote village, 25 miles to the north of Goojrat, and 10 west of Bhimber, it is said that the disease was traced distinctly to communication. A coolie who was engaged on the railway works at Nowringabad, near Jhelum, and who was in the habit of re-visiting his home in this village, returned on the 26th August. He took ill on the afternoon of the 27th, and died in a few hours. Eight others, who, it is stated, shared their meal with him during the evening previous, were seized the same night. Then followed in succession two fresh cases on the 28th, ten on the 29th, eight on the 30th, two on the 31st, and two on the 1st September. The Police Returns show a death from cholera at this village on the 25th, but on further enquiry the Civil Surgeon is satisfied that it was really due to fever. Throughout the whole district deaths from cholera were recorded at only 23 places. In many of them only one occurred. Some of these were either travellers or persons who had been to infected quarters; others had not left their homes. Excepting the three places already mentioned, not one suffered with any severity. In many of them there was only one death in each.

No. 78, Goojrat.

VI. Preventive measures.—At the various ferries leading into the district, arrangements were made for examining all travellers. Those from infected localities who were in good health were allowed to proceed after washing their clothes. Those who were found suffering from cholera were detained for treatment. It is estimated that at the seven main ferries about 3,500 persons were examined daily, and 22 cases of cholera were treated. Along the Cashmere frontier, a stretch of about 50 miles, the heads of groups of villages were called on to prevent people from coming into the district. As soon as a case occurred in a village a cordon was drawn round it; a shed was provided inside the cordon to receive the sick. Medical aid was supplied, and houses attacked were disinfected. The inhabitants were allowed to go to their fields, but their fields are generally isolated patches attached to the village. Practically these measures were applied to only four places. In eleven others they were not required, as before the reports were received, the disease had either disappeared or showed no sign of spreading. For the town of Goojrat a regular quarantine was established. Persons who came from healthy places were allowed to enter at once after washing their clothes, but those coming from quarters where cholera was present were kept for seven days under observation. A cordon was placed round the city. The inhabitants strongly objected to these measures.

No. 79, Jhelum.

JHELUM.—*Assistant Surgeon E. Gardner, Civil Surgeon.*—Population 500,988. Area 3,909 square miles. Number of towns and villages 998. The town, which is on the right bank of the River Jhelum, has a population of 5,148.

II. Details of the outbreak.—The first case in the town was on the 10th July, and this is said to have been the first case in the whole district; but the police returned two deaths from cholera in May, one in each of two different villages, and in June six, of which two occurred in

Notes on outbreaks, Jhelum.

the town of Pinddadun Khan. In July altogether there were fifteen in five different places; in August 252 spread over twenty-five places; in September six over five places. The cases in the early months are doubtful; one on the 10th July was verified. The five villages attacked in that month were widely scattered. As a whole, the disease was confined chiefly to the towns of Jhelum and Pinddadun Khan, and to villages within 10 miles round each. In Jhelum, between the 11th July and 2nd September, there were 122 cases and 53 deaths. In Pinddadun Khan, a town of 17,538 inhabitants, there were between much the same dates 652 cases and 172 deaths, as reported by the hakeems. The two places are 50 miles separate. There was no cholera in the district beyond the salt range of hills, at the foot of which Pinddadun Khan is situated. In the *cantonment,* which is about a mile from the city, both lying close by the Grand Trunk Road, there were nine cases in all.

On the 24th July	1
" 25th "	2
" 27th "	1
" 29th " *	1
" 6th August	2
" 7th "	1
" 9th "	1
	9

All but one occurred in the 5th Bengal Cavalry, either among the men or followers After the cholera, fever was very prevalent. Dr Gardner states that in 1869, although there was no cholera, fever was epidemic, attended in many cases with diarrhœa.

III. Importation and communication.—Neither in the district, the city or the cantonment, could the first case be traced to importation. In many of the villages only one or two deaths from cholera were reported. As a rule, the persons attacked were treated in their own houses, and no spread of the disease was caused by this arrangement. The outbreak, although not very severe, was widely spread over the town, and its spread observed no definite order. Two cases are given in which the disease may have been spread by infection. A Eurasian woman was attacked with cholera on the 18th; took her child in her arms on the 20th. On the 28th the child was seized. Both lived in the same house throughout. A child was attacked on the 3rd August. "She was living with several brothers and sisters in the greatest possible squalor. Their clothes and very food were defiled by the copious vomits. One sister was seized on the 6th;" none of the others were attacked.

VI. Preventive measures.—All people coming into the district were examined at the ferries. It was intended that any suffering from choleraic symptoms should be stopped and treated, but no such cases presented themselves. People who wished to enter Cashmere from Jhelum were subjected to the same surveillance by the Jummoo authorities. Orders were given at Jhelum and Pinddadun Khan to destroy all clothing and bedding of cholera cases, but it is doubtful how far these orders were really carried into effect. In the villages no such measures were attempted.

VII. Previous history.—The remarkable immunity from cholera which Jhelum has enjoyed is very strikingly shown in the annexed statement, from which it appears that during the twenty-three years, 1850 to 1872, cases have appeared among the troops or prisoners in only seven of them, and in nearly every instance the disease was limited to isolated cases.

Statement of Cholera at Jhelum, 1850 *to* 1872.

Year.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1850	Native Troops -	2,439	...	...	...	1	...	...	...	...	...	...	...	...	1	...
1851	Ditto " -	2,113	...	...	...	...	...	...	...	...	...	...	...	1	1	...
1853	Ditto " -	2,481	...	...	1	1	2	...	...	...	...	...	...	...	4	1
1854	Ditto " -	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1855	Prisoners -	278	...	...	...	...	...	...	...	...	...	...	...	...	1*	...
1856	Native Troops -	1,459	...	...	...	...	...	...	...	2	9	...	1	...	12	8
	Prisoners -	267	...	...	...	...	...	..	...	...	1	..	...	...	1	...
1862	Ditto -	311	...	...	...	...	...	...	...	...	3	...	...	...	3	...
1872	European Troops -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Native " -	1,538	...	...	...	1	...	..	2	3	...	...	...	...	6	2

* Month not known.

Rawul Pindee.

RAWUL PINDEE.—*Surgeon J. Ince.*—*The district* has a population of 699,647, and an area of 6,215 square miles. It contains 1,658 villages and towns, but only four have above 5,000 inhabitants in each.

II. Details of the outbreak.—On the 9th June the first death from cholera occurred; in that month three were reported from three different places. In July two more deaths were

Notes on outbreaks, Rawul Pindee.

registered in two other places. In August thirty in ten places. In September 107 in twenty-five places, and in October six in four places. The earlier cases were widely scattered over the district. In August and September the disease was chiefly confined to the Pindee and Murree Tehseels. In the *city*, which has a population of 19,228 there were 101 cases between the 21st August and the 14th September.

III. Importation and communication.—The first cases were nowhere traced to communication. The disease in the city and cantonment appeared in August in three separate places on the same day, and at or about the same time, two in the city and one in the cantonment. The man attacked in the cantonment is said to have been in the city on the previous day. In the cholera hospital where 31 cases were treated, none of the attendants were attacked. Seventy persons were treated in their own houses and in no case did they form a centre from which the disease spread.

V. Local conditions.—The *drainage* of the town is naturally excellent, and it is kept very clean. The *water* is drawn from wells, but as they are expensive to construct, they are not so very numerous as in other towns. No connection could be traced between the cases of cholera and the use of any particular water.

VI. Preventive measures.—*Quarantine* was attempted at several places. On this point the following details have been furnished by the Deputy Commissioner, Major H. B. Urmston:—"Quarantine was established first against Jhelum on the 9th of August 1872 at the Sohan River, 3 miles from the cantonments, and removed on the 25th September 1872. No case was detected by the guard here."

"Against Cashmeer, at Kohala Bridge, River Jhelum, at a distance of 20 miles from Murree, established on 19th August 1872, and removed on 25th September 1872."

"Against Murree and Cashmere, established on 22nd August at the 3rd mile stone, on the Murree road, and subsequently (1st September) at Barakow, 13 miles out on the same road, which was reduced on the 25th September 1872. Three cases of cholera were detected at this post, namely, one on 12th September and two on 13th idem."

"A military cordon was also established on 22nd August round the north and east side of the cantonments of Rawul Pindee to cut off all communication between the city and cantonments."

"On the outbreak of cholera at Peshawur quarantine was established at Khyrabad across the Indus near Attock on 11th October 1872. It was partially reduced to three days on the 29th idem, and wholly removed on 5th November 1872. Four cases were detected here on the following dates:—

On 14th October	2
" 22nd "	1
" 23rd "	1

The Cantonment.—Deputy Inspectors General of Hospitals, British Forces, T. Best, Indian Forces, G. Banister.—The combined Civil and Military station about 2 miles from the city. The garrison consisted of three Batteries of Royal Artillery, the 36th and 70th Regiments of Foot, the 9th Bengal Cavalry, 5th Company of Sappers and Miners, the 14th Native Infantry, the Depôt of the 23rd Native Infantry, and the 25th Native Infantry. The population of the bazar, &c., is estimated at 7,140.

No. 80, 36th & 70th Regiments.

II. Details of the outbreak.—In the 36th Regiment (Assistant Surgeon Leslie) there were two cases of cholera, one on the 17th July and the other on the 17th September.

In the 70th Regiment (Surgeon Fuller and Assistant Surgeon Knox) three cases have been recorded, one on the 9th September and two on the 12th. But three cases with cramps, collapse, and suppression of urine, in fact all the symptoms of cholera, occurred, one on 18th June, one on 27th, and the third on the 30th July.

No. 81, 25th Punjab Infantry.

In the 25th Punjab Infantry one man was attacked on 23rd August. In the bazar, there were seventeen cases, of which ten were fatal. With the exception of two returned on the 19th July, all these persons were attacked between the 25th August and 22nd September. In no section of the community was diarrhœa prevalent, nor was fever.

III. Importation and communication.—In the 70th the case of the 12th was the father of the child attacked on the 9th. The child was a patient in hospital suffering from fever and diarrhœa, but had been allowed to sleep in the father's quarters on the nights of the 7th and 8th. The father did not nurse the child after it was seized, but was with it at times. He was much depressed having lost his wife only a few months previous. None of the attendants in any of the hospitals were attacked.

V. Local conditions.—The cantonment lies high, and the natural *drainage* is excellent. *Water* is drawn from wells, many of which are covered, but none yet provided with a pump. They are no better defended than the wells in many other cantonments.

VI. Preventive measures.—As regards the cantonment cordon, it is to be noted that the passes issued were very numerous, at least 200 or 300 a day. Persons as they returned were supposed to be fumigated.

VII. Previous history of Rawul Pindee as regards cholera has been very favorable.

Statement of Cholera at Rawul Pindee, 1849 *to* 1872.

Year.		Average Strength.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Cases.	Total Deaths.
1849	European Troops	882	...	...	...	1	...	1	1	1	...	2	3	1	10	1
1850	Native „	2,377	...	..	...	...	3	...	...	...	...	...	...	...	3	1
1851	European Troops	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1*
	Native „	2,225	...	...	...	...	...	1	...	...	...	...	...	...	1	...
1852	European Troops	...	...	...	...	...	...	...	..	...	1	...	...	...	...	1*
	Native „	2,740	...	...	...	...	...	..	...	...	...	1	...	...	1	...
1853	Ditto „	2,850	1	...	...	...	1	1	1	...	...	...	...	...	4	...
1854	Ditto „	...	...	...	...	...	...	2	..	...	1	...	...	...	3	...
1856	Ditto „	3,770	...	...	...	...	...	...	2	...	...	...	1	...	3	...
	Prisoners	649	...	...	...	...	1	...	...	1	...	...	...	...	2	1
1857	Ditto	886	...	...	...	...	..	...	...	...	1	...	...	...	1	1
1858	European Troops	1,039	...	...	...	...	4	...	2	6	...	...	...	...	12	8
	Native „	...	...		...	...	1	5	1	...	1	...	...	...	8	4
1859	European Troops	1.467	...	...	...	...	..	1	...	...	...	...	...	...	1	...
1861	Prisoners	754	...	...	...	...	...	...	...	...	...	1	...	...	1	1
1862	European Troops	1,591	...	...	...	...	...	...	...	1	...	...	...	...	1	...
	Native „	749	...	...	...	...	...	...	...	1	...	...	...	...	1	1
1863	European Troops	1,652	...	...	...	..	...	...	...	...	...	1	...	...	1	1
1867	Native „	1,503	...	...	...	...	...	2	1	...	...	...	...	...	3	2
1872	European Troops	1,775	...	...	...	...	..	...	1	...	3	...	...	...	4	4
	Native „	1,658	...	...	...	...	...	...	...	1	...	...	...	...	1	...

* Only deaths recorded.

No. 82, Murree.

MURREE.—*Staff Surgeon William White, M. D.*—A Sanitarium in the Himalaya at an elevation of 7,800 feet above the sea, 40 miles from Rawul Pindee. It is much frequented during the summer and rains by officers and their families, and contains a depôt for European soldiers, their wives, and children. The native population of Murree is returned as 10,605. The strength of the depôt was 865.

II. Details of the outbreak.—The first case known at Murree was that of a European soldier attacked on the 9th August. "The man had been eating unripe fruit and feeling unwell had taken some native drug previous to the attack, which proved fatal in 19 hours." With the exception of one case in the bazar, there was no further seizure until the 29th August. The daily register of cases among the troops and of deaths among the general population is as follows :—

	Depôt (Cases).	Bazar (Deaths).		Depôt (Cases).	Bazar (Deaths).
August 9th	1	...	September 10th	...	5
„ 10th	...	1	„ 11th	4	1
„ 25th	...	1	„ 12th	2	3
„ 29th	2	3	„ 13th	1	2
„ 30th	9	3	„ 14th	1	2
„ 31st	2	8	„ 15th	...	1
September 1st	5	2	„ 16th	1	1
„ 2nd	5	4	„ 17th	...	...
„ 3rd	...	1	„ 18th	...	1
„ 4th	...	1	„ 19th	...	2
„ 5th	2	1	„ 20th	...	...
„ 6th	...	2	„ 21st	...	...
„ 7th	5	2	„ 22nd	...	1
„ 8th	...	4	„ 23rd	...	...
„ 9th	...	3	„ 24th	...	1

The results in the depôt were thus :—

	Strength.	Admissions.	Deaths.
Officers	14	...	...
Men	558	33	23
Women	100	2	2
Children	212	5	3

The cases which occurred in Murree are entered as having been admitted into hospital from 14 different buildings. Sixteen of the 40 occurred in camp. The outbreak cannot be said to have been either preceded or accompanied by diarrhœa to any extent.

III. Importation and communication.—" Nothing whatever occurred to support the theory of the disease being propagated either by *contagion* of *individuals* or the use of contaminated water, numerous cases having occurred simultaneously in different parts of the station, and the patients having had no communication with each other. None of the

Notes on outbreaks, Murree.

orderlies or fatigue men who nursed their stricken comrades with the greatest devotion were attacked, nor any one in attendance on the sick in any part of the station. The water used by those attacked was the same as that used by hundreds of healthy men, and was carefully filtered in every barrack." '

IV. Meteorology.—" Two days before the outbreak of the disease on the 29th August, a dense brown mist overhung the valley of the Jhelum, the atmosphere at Murree being extremely close and oppressive, while the wind blew *steadily,* although not strongly, from the north-east. *i. e.,* from the infected localities."

VI Preventive measures.—Quarantine was early established at Dewal, 10 miles from the station, to keep the disease out from the contiguous territory where the disease was prevailing. The barracks in which the cases occurred were immediately evacuated; the detachment of the 1-6th and 36th and next day the 70th were moved into camp at Kotli and Chamiana respectively, 3 and 5 miles from Murree on the Kashmir road. On the day after the arrival of the first detachment at their camping ground on an eminence a a mile beyond Topah the disease re-appeared, ten fresh cases having occurred, nine of which proved fatal."

VII. Previous history.—The Murree depôt has suffered twice before from cholera, once in 1858, when the outbreak was much more severe in proportion to strength than in the past year, and again to a slight extent in 1867.

Statement of Cholera at Murree, 1856 *to* 1872.

YEAR.		Average Strength.	NUMBER OF CASES.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1858	European Troops -	114	...	...	...	...	...	...	40	4	...	...	...	...	44	31
1867	European „ -	346	...	...	...	...	...	...	5	2	...	...	...	...	7	3
1871	- -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1872	- -	865	...	...	...	...	...	...	...	14	26	...	...	...	40	28

No. 83, Attock.

ATTOCK.—*Staff Assistant Surgeon A. Thomson, M. D.*—A fort in the Rawul Pindee district on the left bank of the Indus. It is situated on the Grand Trunk Road, 56 miles from Pindee, and 45 from Peshawur. The garrison consisted of 5 officers, 71 men, 10 women, and 10 children of the 5-13th R. A., and 105 men of the 2nd Battalion 60th Rifles. Of native soldiers there were 176, and about 150 followers.

II. Details of the outbreak.—One Serjeant of the Rifles and 2 men of the Artillery were attacked; all died. The first case was admitted on the 2nd October. The man was suffering from fever and diarrhœa, but undoubted cholera supervened on the 3rd; the second was on the 5th and the 3rd on the 6th, both in hospital, but in a ward two wards removed from that in which the first man was ill. Among the general population of the small town of Attock, only one death from cholera is recorded. It is entered on the 13th October. Diarrhœa was not prevalent, but there were a few cases. Fever commenced to be very prevalent about the middle of August, and continued so till near the end of December.

III. Importation and communication.—The first case could not be traced to importation, nor the others to contagion; none of the attandants were attacked.

V. Local conditions.—The fort stands very high. The *drainage* is said to be good. The *water* is brought from a well outside the fort. It is locked up at night and has a sentry over it during the day. There is no pump, and the water is drawn in the ordinary way. The same well was used throughout. The natives drink generally from the river. There was no *overcrowding,* and the conservancy was good.

VI. Preventive measures.—Quarantine.—In September, when it was reported that cholera was prevailing at Murree, extra sentries were posted round the fort, and natives were prevented from coming into the fort except tradesmen and others who were absolutely required, and who were provided with passes. Forty-six permanent passes of this kind were issued. " Officers' servants and camp followers were also provided with passes, so that nearly 200 natives were daily admitted, and at night they returned to the native town where their houses were." From the 14th September, by order of the Peshawur authorities, all officers returning from Murree were detained at the Attock Dâk Bungalow for seven days. After a short time, however, the term of detention was reduced to three days. No symptom of cholera appeared amongst them. No servants were allowed to accompany them. These were detained for seven days at Barralow on the road between Murree and Pindee. Natives coming from the Pindee direction were examined and diverted, so that they should not enter Attock. " They were escorted by the Police three times a day along the Grand Trunk Road to the ferry boat above the Serai, where they were taken across the Indus to Khyrabad. While the quarantine lasted, six or seven hundred natives a day were taken across the Indus." None of them were found to be suffering from cholera. When cholera appeared at Attock, quarantine was established at Khyrabad on the opposite side of the river, as will be explained more fully in the notes regarding Peshawur. When Peshawur was attacked, quarantine was established against it, and all travellers thence were kept under observation for three days at Khyrabad; those whose destination was Attock were kept in a separate place for seven days. Among people coming from Peshawur 5 cases of cholera occurred. Sometimes there were as many as 800 people in detention at one time. It was impossible to keep each day's arrivals separate, so that those who were allowed to go on had been mixed for six days with new batches. The people, excepting the very poor, arranged for feeding themselves; they had no shelter, but were on the open plain. The quarantine caused much inconvenience and discomfort. *Movement.*—On the 6th October the hospital was vacated and the inmates encamped outside the fort; no more cases followed.

Notes on outbreaks, Attock.

VII. Previous history.—Although Attock has been garrisoned since 1858 by about 150 European troops, not a single case of cholera has occurred among them during 15 years. In 1867 there were three cases among the native soldiers. In the great epidemic of 1869 Attock entirely escaped.

Statement of cholera at Attock, 1858 *to* 1872.

YEARS.		Average Strength.	NUMBER OF CASES.												Total Cases.	Total Death
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1858	Native Troops -	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	Prisoners (a gang) -	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
1861	Native Troops -	461	...	...	...	...	...	...	...	...	...	1	...	...	1	...
1867	Native " -	148	..	...	...	...	...	2	1	...	...	...	...	...	3	2
1872	European " -	204	...	...	...	...	...	...	...	...	...	3	...	...	3	3

NOWSHERA.—A military station, 19 miles above Attock, and 26 below Peshawur. Garrison consisted of 2-60th Rifles, 10th Bengal Cavalry, and 30th Native Infantry.

No. 84, Nowshera.

II. Details of the outbreak.—No cholera.—Assistant Surgeon Martin of the Indian Medical Service, the only Medical Officer at Nowshera, during my visit, who had been there in 1872, states that there was no case of cholera in the cantonment, but that there were several suspicious cases of fever with vomiting, purging, and much depression. The dates of these are not known, but they occurred at the time cholera prevailed at Peshawur. In the Nowshera Tehseelee of the Peshawur district a few deaths from cholera are recorded. Seven places give 32 deaths between the 28th August and 4th November, but of these nearly all occurred at Wurg Ismael Kheyl where it was severe between the 19th October and 3rd November.

V. Local conditions.—The *drainage* of the cantonment is bad. I visited the station just after a moderate shower, and the water lay in every direction. The wells are covered, but there are no pumps. Near several of them were hollows full of water, the product of surface drainage. The soil is very sandy, and any impurity might easily sink into the water-supply.

VI. Preventive measures.—Quarantine was established at each end of the station. Persons not intending to remain at Nowshera were passed along the trunk road which runs through it. Those intending to stay at Nowshera were kept under observation for 7 days. Among them one case of cholera occurred, a sepoy returning from Peshawur. None of those who attended him suffered.

VII. Previous history.—In no year since its first occupation has Nowshera suffered from cholera beyond a very few cases.

Statement of cholera at Nowshera, 1855 *to* 1872.

YEARS.		Average Strength.	NUMBER OF CASES.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1855	European Troops -	...	...	...	...	...	..	...	...	...	...	...	1	...	...	1
1856	Native " -	720	...	...		1	1	...	...	...	...	...	...	...	2	...
1858	European " -	412	...	..	...	...	...	...	...	2	...	...	...	...	2	2
1859	Ditto " -	771	...	...		...	. .	...	..	1	...	...	...	.	1	...
1862	Ditto " -	722	...	...	..	...	.		...	2	...	...	...	...	2	2
1867	Ditto " -	730	...	...	...	..	..	5	...	...	...	...	...	...	5	2
1869	Ditto " -	669	...	...	..	...	..	...	...	...	6	. .	...	...	6	5

Notes on outbreaks, No. 85, Hoti Murdan.

HOTI MURDAN.—(Surgeon S. C. Courtney), 13 miles north-east of Nowshera, garrisoned by the guides one of the Regiments of the Punjab Frontier Field Force. In May the strength was 674 men.

II. Details of the outbreak.—On the 26th May a Bunneah in the bazar was attacked, and died next day. He is said to have eaten largely of cucumbers. This was the only case, and the whole of the neighbouring country called the Yoosufzai was free of the disease. Diarrhœa was not prevalent. In October fevers were very common.

III. Importation and communication.—The Bunneah had returned from Hurdwar on the 18th April 40 days before he was attacked. It appears that on the 12th April he was taken ill on his way back with purging and vomiting, and "continued to be purged often daily till a few days before his death." Violent symptoms set in on the 26th. Dr. Courtney has no doubt it was a true case of cholera.

V. Local conditions.—The *drainage* is said to be good. The *water* is drawn from four wells. To two of these masonry troughs are attached which were out of repair, and might prove a ready source of contamination. The barracks are badly constructed, and in the cold season especially are greatly overcrowded.

VII. Previous history.—The history of Murdan as regards cholera has been singularly favorable.

Statement of cholera at Murdan, 1856 *to* 1872.

YEARS.		Average Strength.	NUMBER OF CASES.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1856	Native Troops	876	...	...	...	...	...	...	...	...	1	...	...	...	1	...
1862	Ditto "	...	...		...	...		...	...	2	...	...	...	...	2	...
1869	Ditto "	867	...	...	...	1	...	...	...	...	...	...	2	...	3	1
1871	Ditto "	897	...	...	...	...	...	...	...	...	1	...	...	...	1	...

Peshawur.

The PESHAWUR district lies to the north of the Indus. It consists of a valley about 50 miles in length by 40 in breadth. It is intersected by three considerable rivers, the Bara, the Cabul, and the Swat. From these the land is largely irrigated, but in the Yoosufzai division, which lies to the west, the crops are dependent on the rainfall. The total population is 500,443, and the area 1,929 square miles. There are 654 villages, but only one town, which takes the name of the district, and is situated about 2 miles from the cantonment.

II. Details of the outbreak.—The first known case of cholera in 1872 occurred in the Fort of Shubkudder, 20 miles to the north of Peshawur, on the 8th of May. The man, a trooper of the Bengal Cavalry, recovered. On the evening of the 7th May, however, a sepoy of the 26th Native Infantry had been admitted into hospital, and died at 3 A. M. of the 8th. The medical officer states that the man "had been suffering from severe fever for two days before admission, and on the evening of the third day suffered from a severe attack of vomiting and purging—no unusual accompaniment of Peshawur fever. There was nothing in the *post-mortem* appearances to account for death." On the 28th of that month a death from cholera took place at Murdan in the Yoosufzai division of the district. In May also the Sub-Assistant Surgeon treated a case in Peshawur, but the exact date of attack is not recorded. In June one death was registered on the 15th among the general population. July was entirely free, but in August two deaths are entered, one of which took place in the city on the 23rd. On the 14th September one death from cholera was registered in the city of Peshawur, and a case occurred at Shubkudder on the same day. In October 310 deaths from cholera were registered at 25 different places, of which 247 occurred in the city. In November 76 deaths were reported, of which three were in the city, and the remainder in nine villages. Excepting the solitary case at Murdan, Yoosufzai, so far as is known, escaped altogether. In these numbers for October and November are not included the cases which occurred in the cantonment, of which mention will be made hereafter.

No. 86, City.

The City.—(Surgeon H. W. Bellew, Civil Surgeon, Sub-Assistant Surgeon Cheytun Shah), has 58,555 inhabitants. It appears that the case which proved fatal here in August was only suspicious, but that which occurred on the 14th September was one of undoubted cholera. The man was a traveller who had come from the Kohat direction and had been in quarantine for seven days at Umul Chubootra on this side of the pass. On the night of the 4th October a Jemadar, who had been on duty at this quarantine, was brought into the city surreptitiously suffering from cholera. On the morning of the 5th October two cases of mild cholera were seen by the Sub-Assistant Surgeon. These persons lived in different houses, one about 100 and the other 130 paces from that to which the Jemadar had been taken. On the 7th a case occurred on the opposite side of the city. On the 8th two in different quarters. The subsequent distribution of disease according to dates will be given in a general statement. In all, according to the Sub-Assistant Surgeon's account, there were 352 cases and 219 deaths; the cases were widely scattered over the city.

Diarrhœa was somewhat more frequent than usual. Fever was extremely prevalent. The Sub-Assistant Surgeon saw many cases of fever. It was severe and not unfrequently fatal. It was often attended with vomiting, purging, temporary suppression of urine, and collapse. These symptoms are frequently found in cases of fever in the valley, and such cases are for the time almost undistinguishable from true cholera. They are known under the name of "Peshawur fever." The bad symptoms often cease as rapidly as they appeared. On the 7th September the Sub-Assistant Surgeon records,—"In many cases of fever of this week there was vomiting and purging of a bilious character. A few have shown symptoms of collapse." On the 19th October he wrote,—"Scarcely a household has escaped fevers. Often they run into cholera." On the 26th October again,—"Fevers of this season have been very weakening in their effect; a single day's attack is prostrating." As in 1867 and 1869 fevers began to be prevalent before the cholera showed itself and continued for some time after it left. The amount of severe sickness may be estimated from the fact that while in September there were 313 deaths recorded in the city, in October there were 1,152, of which only 247 were from cholera; in November there were 472, of which cholera contributed only three.

Notes on outbreaks, Peshawur.

III. Importation and communication.—The disease is supposed by some to have been introduced by the sick Jemadar on the 4th October. The two persons who were suffering from mild cholera on the morning of the 5th had been ill for some hours, and must have been attacked at the same time as or very shortly after the Jemadar arrived. None of the persons in the Jemadar's own house were seized. The case of the 7th could not be traced to communication. Persons generally were treated in their own houses, and there is no evidence that these cases acted as centres from which the disease spread. The Sub-Assistant Surgeon, 2 Hakeems and 14 native doctors were constantly employed in treating the sick during the outbreak. None of them had any symptoms of cholera nor any member of their families. Seventy-five poor people were treated in a special hospital. Of the fifteen attendants who waited on them none suffered.

V. Local conditions.—The drainage of the city and its conservancy had been much improved since 1869. When cholera was known to be at Kohat in the end of August, exertions to keep it clean were redoubled, an increased staff of sweepers was employed; disinfectants were freely used, and fumigation by means of some 300 bonfires carried out. The water-supply is derived partly from a cutting from the Bara river, but the drinking water is chiefly drawn from wells, of which there are 798 in the city.

VI. Preventive measures.—Quarantine was established at Umul Chubootra on the Peshawur side of the Kohat pass on the 20th August as soon as the existence of cholera at Kohat was known and maintained till the 14th October. All persons coming from the Kohat direction were detained here for 7 days. Among them there was one death from cholera. How many cases occurred is not known. On the 14th September similar measures were taken at Khyrabad, a place on the Indus immediately opposite Attock. For the first few days the term of detention was 7 days, but it was then reduced to 3 days. Between the 14th September and 1st October about 2,000 people were so detained. There were no means of separating one day's arrivals from those of another. No case of cholera was found amongst them. The quarantine was strict as the bridge of boats was up, and the name of every one who crossed was entered in a Register. Officers proceeding to Peshawur were detained at the Attock Dâk Bungalow. As the disease appeared to have ceased down-country, the quarantine was raised on the 1st October, but, when it appeared at Attock, it was renewed from the 7th to 16th. During that time no cases of cholera were found among persons proceeding towards Peshawur, but five occurred among those who had come from the valley. By the 16th cholera had become general at Peshawur, and the quarantine at Khyrabad, so far as related to the attempted protection of Peshawur, was removed. It may be mentioned that as early as May, when it was supposed that pilgrims from Hurdwar were disseminating cholera, a native doctor had been posted at Khyrabad for the relief of travellers, but none were found suffering from the disease. In the city an attempt was made to prevent the spread of the disease by isolating the first cases, but it was given up as useless. In addition to other precautionary measures, it may be mentioned that all sepoys returning from leave were isolated on the skirts of cantonments and detained under observation for 7 days. About 400 were thus kept under supervision, but no case of cholera appeared amongst them. A detachment of time-expired Europeans under orders to march down-country were detained lest they should spread cholera; of these, several died of it.

VII. Previous history.—The statistics of the three outbreaks of cholera in the city of Peshawur of which particulars are known are as follow:—

Years.	Cases.	Deaths.
1867	Not known.	1,020
1869	2,642	1,572
1872	352	219

In 1872, the individual cases were as severe as in the previous years, but the number was much smaller.

No. 87, Jail.

The *Jail.*—Number of prisoners, 736.

II. Details of the outbreak.—One case of cholera on the 14th October in a woman who had been 27 days in confinement.

Notes on outbreaks, Peshawur.

III. Importation and communication.—No communication could be traced, nor did the disease spread. None of the guards were attacked.

The *Cantonment* at its nearest point is about 1,000 yards from the city. In October 1872 it was garrisoned by three Batteries of Royal Artillery, two Regiments of European Infantry, two of Bengal Cavalry, two Companies of Sappers and Miners, and 4 Regiments of Native Infantry. It occupies a ridge which slopes down to the surrounding country with a fall of from 20 to 60 feet per mile. The natural *drainage* is excellent, but in many parts advantage has not been taken of these facilities, and the water stagnates in the lines and close up to the quarters occupied by the men. The soil is chiefly a stiff clay with boulder strata underneath. About a mile from the station, a cutting from the Bara river divides, sending one branch to the city and another to the cantonment. The cantonment share equals 1·18 cubic feet or about 7¼ gallons per second. The channel is altogether unprotected; in many places it receives the surface drainage, and is in reality a road-side ditch. In the lines both of the European and Native Regiments it is received into reservoirs, some of which are open and others covered. In most of them there is some rude contrivance for filtering the water before it enters. From all of them the supply is drawn as required by means of some kind of vessel which is dipped into the reservoir. This water is almost exclusively used by the Native Troops for drinking, but the Europeans are supplied from wells.

No. 88, Royal Artillery.

II. Details of the outbreak.—Royal Artillery, Surgeon Major J. Kellie.—The strength and the number of cases are shown in the following statement:—

DETAILS.	HEAD QUARTERS, A. BRIGADE.			C-A. R. H. A.			A-8th R. A.			3-XXIII.		
	Strength.	Admissions.	Deaths.	Strength.	Admissions.	Deaths.	Strength.	Admissions.	Deaths.	Strength.	Admissions.	Deaths.
Officers	6	...	...	4	...	...	2	1	...	2	...	...
Men	6	...	...	114	...	...	81	4	4	61	...	...
Women	2	...	...	9	...	...	4	...	...	11	...	...
Children	5	...	...	12	1	1	4	...	...	33	1	...

The first case was that of an officer of A-8th, who was attacked on the 14th October, but ultimately recovered. His case was not returned as one of cholera. At midnight of the 17th October, a man of this Battery was seized on guard. He had come from No. 8 Barrack. Next morning A-8th moved into camp, leaving behind two men who were admitted into hospital that morning. One was suffering from diarrhœa and the other from ague. One came from No. 11 and the other from No. 9 Barrack. On the 20th the ague case shewed symptoms of cholera, and on the 21st the diarrhœa case had declared itself as one of the same disease. Both men died. On the 22nd a case occurred in camp in a man who came from Barrack No. 8, and who had been suffering from diarrhœa since the 20th.

In 3-XXIII a child was attacked in the married quarter on the 19th October.

In C-A. R. H. A, a child was seized on the 22nd November.

Of 14 buildings occupied by the Artillery, 5 were attacked. There is no separate record of cases among the followers. They were entered in the station returns. None occurred in camp.

Cases of diarrhœa were not common, but several of the officers suffered from it. Fever was prevalent; not so prevalent, however, as among the Infantry, which may be accounted for in some measure by the fact that Quinine had been given as a prophylactic in doses of 3 grains daily to each man. The admissions in fevers in the Artillery were—

Week ending	6th	September	13
„	13th	„	8
„	20th	„	18
„	27th	„	12
„	4th	October	24
„	11th	„	35
„	18th	„	32
„	25th	„	28
„	1st	November	25
„	8th	„	10
„	15th	„	11.
„	22nd	„	17

Many of the fever cases were attended with vomiting, purging, and collapse, very like those of cholera.

III. Importation and communication.—Careful enquiry altogether failed to trace the first case to communication, and in the course of the outbreak there was no evidence of contagion. Of about a dozen persons attending on the sick none were seized.

Notes on outbreaks, Peshawur,

IV. Meteorology.—Dr. Kellie says there was "an unusual rainfall in July and August; 6·36 inches fell in 14 days; slight easterly winds constantly prevailed during the entire period of the epidemic."

V. Local conditions.—The *drainage* of the lines is reported to be bad. The *water* is taken from Mackeson's well which is close by the hospital. The cutting supplied from the Bara river flows through the lines, and may have been used just as it may have been used by the European Infantry Regiment, but an Orderly is specially told off to see that the water is really taken from the well. The filters are the ordinary chatty filters, and sand and charcoal for them are supplied in common. When A-8th moved into camp, the water was drawn from the Caubul river. They had new filters supplied on the day they went out. The men had ample room as many of them were at Cherat with their families.

No. 88, Royal Artillery.

VI. Preventive measures.—A-8th moved to Dowdzai 7 miles off, on the 18th October. When the only case they had in camp declared itself on the 22nd a further march of 5 miles was made to Adozai. On the 9th November, the battery returned to cantonments much benefited by the change. Movement improved the health of the men. Fevers from which they had suffered previously, almost entirely disappeared. In the other batteries when the solitary cases already mentioned occurred, the quarter concerned was at once vacated.

No. 89 1-6, Regiment.

1st Battalion, 6th Royal Regiment, Surgeon E. F. O'Leary, Assistant Surgeons J. W. Morgan and R. Exham.

II. Details of the outbreak.

	Strength.	Admissions from cholera.	Deaths.
Officers	13	...	...
Men	455	24	19
Women	39	2	2
Children	33	1	...

Strength of followers, and number and dates of cases among them not known. In camp 10 of them were attacked. The cases in the regiment recorded under the head of cholera occurred as follow :—

9th	October	1	in cantonment.	
11th	„	1	in ditto	
12th	„	3	in ditto	
14th	„	1	Camp, Jumrood road.	
15th	„	1	Ditto	
16th	„	3	2 Cantonment,	1 Camp Bara.
17th	„	2		2 „
18th	„	6	2 „	4 „
19th	„	3	„	3 „
20th	„	1	„	1 „
21st	„	1	„	1 „
22nd	„	1	„	1 „
24th	„	2	„	2 Camp Boodnee.
30th	„	1	„	1 „
	TOTAL ...	27		

Eight different buildings presented cases before the lines were evacuated.

It is to be remarked, however, that on the 1st October a man was admitted from the detachment in the fort, and died in ten hours. His case is entered as one of "remittent fever", but he suffered from purging and vomiting, and was brought to hospital in a state of collapse. There were cramps in the legs, but no suppression of urine. Dr. Triphook who has been good enough to furnish me particulars of this case, is still of opinion that it was not one of cholera. He states that before and during the outbreak of cholera, he saw a number of cases of malarial fever which were attended with bilious vomiting, diarrhœa, and prostration in a marked degree. "In one case in particular which occurred during the time of the cholera, the collapse was so severe, that I apprehended the worst." Five others, I was informed, were admitted from the same detachment in the Fort on the same day with similar symptoms, but they recovered.

Before cholera appeared, fevers had become very prevalent, and continued so both during and after the outbreak. In August, out of 79 admissions into hospital, 63 had been from fever. In September, out of 183, 166 were from fever. Taken by weeks the cases of fever ran thus.—

Week ending 6th September	19 admissions.
„ 13th „	45 „
„ 20th „	38 „
„ 27th „	41 „
„ 4th October	57 „
„ 11th „	67 „

The regiment was then broken up into camps, and many cases were not admitted, but received medicine daily. Dr. Morgan writes, "the increase of fever cases during the week preceding the outbreak of cholera, was very remarkable, owing to which a barrack had to be applied for to act as a temporary hospital."

Notes on outbreaks, Peshawur.

III. Importation and communication.—The first case could not be traced to importation. The man belonged to the two companies who were occupying barracks in the 55th lines. Nor was there any evidence to prove that during the outbreak the disease spread by contagion. A hospital orderly was attacked. He had not been with the sick, but it is supposed that he may have contracted the disease by counting the clothes which men suffering from cholera had worn when admitted into hospital. The facts regarding the attendants are not exact, as there were frequent changes among them, but there is no evidence that they suffered.

V. Local conditions.—The *drainage* of the lines is said to be defective. The *drinking water* is taken from a well in the centre of the barrack square. The two companies in the 55th lines drew their supply from the 55th well. Through both lines the Bara cutting flows, and it is possible that that water may have been brought by the bheesties, but it is muddy and easily distinguishable. The fort detachment drank from the well there. They went down on the 30th September and were relieved by the 55th regiment on the morning of the 7th October. There was no *overcrowding*, the space in barracks was abundant, and conservancy was well looked after.

Movement.—On the 12th October two officers and 24 men from buildings in which two cases had occurred, moved to camp Bara 7 miles to the south-west of cantonment, and on the morning of the 13th they were joined by the head-quarters, consisting of nine officers and 303 men, four women and four children. On the afternoon of the 15th there was a dust storm and a low mist is described as having hung about the camp. On the 16th, there was one case, on the 17th two, on the 18th four, on the 19th three, on the 20th one, on the 21st one. During this time partial moves had been made, and on the 22nd the whole camp was shifted two miles across the Bara river. A fresh case occurred while moving. On the 23rd they moved again to the race course, and on the 24th again moved to Boodnee bridge, two miles to the north of Peshawur. On that day there were two admissions. On the 30th another, the last case occurred in this party. On the 1st November they marched four miles to Dowdzai and returned to cantonment on the 18th. Dr. O'Leary states that in this detachment some cases were brought to hospital almost in a state of collapse with vomiting, purging; and in some of them there was also suppression of urine. They were not fatal. In camp, water was drawn from the Bara, Boodnee and Shahalum branch of the Cabul river. The Bara river where they were encamped is a rapid running stream which never delivers *less* than 20 cubic feet or 123 gallons per second. After the first three days, filters of the ordinary kind were provided and were charged in camp. They were freshly charged at each move. On the 9th October, the company in which the case of that day had occurred, consisting of 1 officer, 21 men, 2 women, and 1 child, moved into camp on the Jumrood road about 1½ miles to the west. On the 17th another camp was formed near them, and occupied by 13 men, 13 women and 15 children from cantonments. Among them there had been 2 cases on the day previous On the 20th a third camp was formed there for 40 men, 1 woman, and 3 children, among whom 2 cases had occured in cantonments on the 18th. In these parties there was 1 case in camp on the 14th and another on the 15th. On the 16th they moved three miles further to Pulosi. No more cases. In the first ground they had their water from cantonment. At Pulosi it was drawn from a well. They took filters and those were freshly charged at each move.

55th Regiment.—Head-quarters at Cherat. Detachment at Peshawur. *Assistant Surgeon A. Brebner.*

No. 90, 55th Regiment.

II. Details of the outbreak:—

	Strength.	Admissions from cholera.	Deaths.
Officers	8	...	...
Men	629	25	21
Women	69	6	4
Children	133	14	12
TOTAL ...		45	37

Fourteen different buildings were attacked including the fort. The disease was widely spread over the lines and erratic in its course. Particulars regarding the followers are not known, but it is believed that only two or three cases occurred at one of the camps.

The regiment came to India in 1864, and arrived at Peshawur in January 1872, from the hill station of Chuckrata, where they had been quartered for two years, and had enjoyed most excellent health.

Before the cholera, several cases of diarrhœa occurred, and fever had begun to be prevalent as appears from the numbers admitted into hospital.

In the week ending	6th	September	1	from Diarrhœa	46	from Fevers
„	13th	„	5	„	90	„
„	20th	„	4	„	113	„
„	27th	„	3	„	97	„
„	4th	October	2	„	108	„
„	11th	„	1	„	79	„

Most of the cases of diarrhœa were severe. Many of those of fever were accompanied by vomiting and purging. In several of them the symptoms of collapse were well marked, and

Notes on outbreaks, Peshawur.

in a few there were cramps in the lower extremities. The discharges were always bilious, or at all events colored. "All rallied in a few hours and some even next day begged to be allowed to go to duty; so rapidly did the symptoms of collapse pass off." After cholera commenced, both diseases continued to prevail; but as many cases were treated out of hospital they are not entered in the returns.

The first four cases of cholera occurred on the 9th October, a woman in the family quarters, a man in the fort at 7 A.M., a child in hospital at 10 A.M., and another man in the fort at 1 P.M. These fort cases were supposed to be cases of fever, and were sent to the regimental hospital in cantonment in the usual way. The progress of the disease was as follows:—

9th	October,	4	cases,	2 in fort, 2 in cantonment.
10th	„	3	„	1 „ 2 „
11th	„	4	„	all in cantonments.
12th	„	1	„	in fort.
13th	„	8	„	1 in fort, 3 in camp Muthra, 4 in cantonment.
14th	„	5	„	1 in camp, 4 in cantonment.
15th	„	2	„	in cantonment.
16th	„	8	„	1 in fort, 4 in camp, 3 in cantonment.
17th	„	2	„	1 in camp, 1 in cantonment.
18th	„	1	„	„
19th	„	1	„	„
20th	„	1	„	„
23rd	„	2	„	„
26th	„	1	„	„
29th	„	1	„	„
1st	November,	1	„	„
TOTAL	...	45	„	

III. Importation and communication.—No history of communication attaches to the first cases. In two instances, Dr. Brebner believes that the disease may have been propagated by contagion. A child of the woman attacked at 7 A.M. of the 9th, was seized at 5 P.M. of the 11th in a tent in the hospital compound; at 6 A.M. of the 16th the husband was attacked. The child was not near the mother after the mother's admission into hospital. The father nursed both the mother and child during their illness. They had all been living in No. 21 family quarters, the building the inmates of which suffered the most severely. It contained 24 of the 69 families and furnished 13 cases, three before and ten after it was evacuated. In another instance a child was taken ill at 10 A.M. of the 13th. The mother while in attendance was seized at 10 P.M. of the 14th. They had both occupied the same quarters in No. 8 barracks. In the other 13 cases in which the mothers nursed their sick children, they did not suffer, neither, except in the instance above cited, did the husbands who attended their wives. Two children at the breast were attacked, while the mothers escaped. In one instance twins were attacked, while the mothers who suckled them did not suffer. In another a woman ill with cholera insisted on keeping her baby in bed with her. The child was not attacked. Four of the men who served as volunteer orderlies during the whole outbreak, escaped. None of the native attendants were attacked.

V. Local conditions.—The *drainage* of the lines is reported to be very bad. The *water* is drawn from a well, and strict orders were issued that this water alone should be used for drinking. The Bara cutting however flows through the lines; it can be so easily obtained that there is a great temptation to the bheesties to fill their mussucks from it, and as a matter of fact, some complaints were made that this water had been supplied. The common filters, composed of three earthen vessels, one above the other, were employed. The sand supplied was too fine, and in consequence only charcoal was often employed. There was no *overcrowding*, as many of the regiment were at Cherat.

VI. Preventive measures.—Movement.—On the morning of the 12th October a party consisting of one officer, 114 men, 30 women and 58 children from affected barracks moved into camp at Muthra, 9 miles to the north-west. There had been among them before moving four cases of cholera. At half past 12 A.M. of 13th, there was a fresh admission, a second at 7 A.M., and a third at 8-30 A.M. On the morning of the 14th they were joined by one officer, 58 men, ten women and 19 children. Among this new detachment there had been several cases of cholera before leaving, but the exact number is not known. At 2 P.M. of the 14th, there was a fresh case in camp. On the evening of the 15th, another detachment consisting of one officer, 136 men, 18 women, and 34 children came out, and these were followed by two officers and 40 men on the morning of the 16th and by two officers, 129 men, three women and five children on the evening of the same day. On the 16th there were four cases in camp. On the morning of the 17th, two companies were detached to Hosseinabad and had no further seizures. Among those left behind at Muthra, there was one case on the 17th, one on the 18th, one on 19th, one on 20th, two on 23rd, and one on 26th. They then moved to Chigrimetty, a distance of 5 miles. Here there was one case on the 29th and another, the last, on the 1st November. On the 18th October the last detachment of the regiment consisting of nine officers, 122 men, two women and two children, left the cantonment, and encamped at Kooee, about 11 miles north on the Dowdzai road; on the 20th they were joined by two companies from the Muthra party.

Notes on outbreaks, Peshawur.

At Muthra the water was drawn from a well, at Chigrimetty, at Hosseinabad and at Kooee from the Shah Alum branch of the Cabul river. At all the camps, filters were supplied after the first few days, and they were freshly charged at each move.

No. 91, 15th B. C.

15th Bengal Cavalry.—Surgeon-Major W. H. Adley—arrived from Mooltan, December 1869.

II. Details of the outbreak.

	Strength.	Admissions.	Deaths.
Officers	4	...	...
Men	300	6	3
Followers	400	6	1

Of these 12 cases one was on the 8th October, two on 9th, three on 11th, three on 12th, one on 13th, and two on 29th October. With the cholera fevers increased. Between 23rd August and 27th September, the weekly admissions under this head ranged from eight to 24. In the week ending 4th October they rose to 30.

III. Importation and communication.—"There was no evidence of importation or origin by communication." None of the attendants were attacked. Waiting men were provided for each case.

VI. Preventive measures.—A detachment of the regiment moved into camp on the 9th August. There were only two mild cases after removal.

No. 92, 16th B. C.

16th Bengal Cavalry.—Surgeon J. C. Morice—arrived at Peshawur, October 1870.

II. Details of the outbreak.

	Strength.	Admissions.	Deaths.
Officers	3	...	...
Men	349	6	4
Followers	566	3	1

The first two cases occurred on the 12th October. On the 13th one, on 15th two, on 16th one, on 17th one, on 19th one, on 28th one. Cases of diarrhœa were admitted, on the 14th one, 16th two, 30th one, November 5th one, and on the 9th one. Dr. Morice who had medical charge of the civil station and the staff at the time, says, that "diarrhœa was very prevalent all over the place." The fever admissions were in—

Week ending	6th	September	26
"	13th	"	21
"	20th	"	24
"	27th	"	28
"	4th	October	23
"	11th	"	17
"	18th	"	30
"	25th	"	16
"	1st	November	28
"	8th	"	10

After cholera appeared many cases of fever were not admitted into hospital, and so do not appear in the returns.

III. Importation and communication.—The first case could not be traced to importation. One man while in attendance on a cholera patient was himself attacked. He had been in attendance only a few hours, belonged to the same troop and came from the same part of the lines. With this exception none of the attendants or of the hospital establishment numbering 27 persons in all were attacked.

IV. Meteorology.—"The atmosphere was thick and hazy, the wind in the east."

V. Local conditions.—The *drainage* is bad. The cutting from the Bara runs through the lines and is practically the main drain, but there is an excellent well in the front, and from this the men drink.

VI. Preventive measures.—The third troop in which all the cases but one occurred, after the second case, moved to tents on the parade ground, and when the third case appeared, marched to Hurree Sing's Boorj, 4 miles to the west. No cases occurred after this move.

No. 93, Sappers and Miners.

II. Details of the outbreak. Sappers and Miners.—There were four cases, of which three were fatal. They occurred, one on the 17th, two on the 18th, and one on 20th October. Diarrhœa was prevalent both before and during the outbreak.

No. 94, 15th Regiment Native Infantry.

15th Regiment, Native Infantry—Surgeon J. J. McDermot, M.D.,—arrived from Ferozepore, December 1869.

II. Details of the outbreak.

	Strength.	Admissions.	Deaths.
Officers	5	...	...
Men	500	13	8
Followers	72	2	1

The cases occurred :—On the 7th October two, 8th one, 12th one, 13th three, 14th one, 15th one, 16th one, 17th one, 18th one, 20th two, November 19th one. Between the 6th September and 25th October 18 cases of diarrhœa were treated. The hospital returns do not show any marked increase in the prevalence of fevers.

III. Importation and communication.—The hospital establishment, numbering 19, and many attendants came in contact with the sick; none of them were attacked. The first man who was seized had been in the city daily for some days before he was attacked. He had been eating raw vegetables and uncooked Indian corn the day before symptoms of cholera set in.

Notes on outbreaks, Peshawur.

IV. Meteorology.—" I noticed nothing peculiar in the atmosphere when the outbreak commenced, and indeed as far as sky and temperature were concerned, I rather think the weather would have been considered fine. I cannot of course speak of the more subtile conditions of the atmosphere, as its electrical condition, etc., but most likely there was disturbance in this respect. The weather was calm until eight days after the beginning of the outbreak, when atmospheric disturbances commenced in the valley, the wind rising, falling, and veering. It continued so until the 21st of the month, (October,) on which date and the date following towards midday, a very violent gale set in from the westward, and apparently came from the surface of the valley just under the very high range of mountains which forms its boundary in that direction. The gale each day commenced about one and a half hour before noon, and ended about one and a half or two hours after it. I consider that the phenomenon was a local occurrence, as the gale swept directly along the surface of the valley from the westward, and could not, I think, have come from beyond the very high range which bounds it in that direction. The gales on each day had a very marked cyclonic motion and clouds of dust and fine sand were borne along with them. It struck me at the time that the phenomenon might be due to electrical disturbance. After the first gale on the 21st October, the atmosphere became remarkably clear, and the epidemic ceased in the regiment on and from that date. One month afterwards, 19th November, a last and final case occurred, but in the interval we had no sign of the disease. The subject of the isolated final case was a man who had recently returned from Fort Michnee in the north of the valley where he had been on detachment duty."

VI. Preventive measures.—On the 20th October, the regiment moved into camp on the parade ground. No cases occurred after this move until the solitary one on the 19th November long after the epidemic in the valley had ceased.

21st Regiment, Native Infantry.—Assistant Surgeon W. A. C. Roe,—arrived at Peshawur, November 1870.

No. 95, 21st Native Infantry.

II. Details of the outbreak.

	Strength.	Admissions.	Deaths.
Officers	3	...	...
Men	409	5	3
Followers	219	1	...

The first two cases were admitted on the 9th October from different quarters. On the 13th a man who had been under treatment for fever for four days was attacked in hospital, one occurred in camp on the 15th. Two followed on the 21st, but the men were attacked on a guard, 3 miles out of the station. Diarrhœa was not prevalent. During September and October only four cases of it were treated; nor was fever prevalent, but this may have been due in part to the small doses of quinine which were given to each man every third day.

The fever admissions in the	week ending	30th August	were	8
Ditto	ditto	6th September	"	8
Ditto	ditto	13th "	"	17
Ditto	ditto	20th "	"	13
Ditto	ditto	27th "	"	7
Ditto	ditto	4th October	"	5
Ditto	ditto	11th "	"	10
Ditto	ditto	18th "	"	12
Ditto	ditto	25th "	"	8
Ditto	ditto	1st November	"	8

III. Importation and communication.—The *first case* could not be traced to communication, nor was there any evidence of contagion during the outbreak. Of 24 attendants on the sick none suffered.

IV. Meteorology.—" For a short time before and during the epidemic, the weather in this station was most oppressive, although the heat was by no means great, nor were punkahs required, yet there was a stifling sensation complained of by every one that could not be accounted for. The hills surrounding the valley were quite obscured by a misty dust cloud which never seemed to clear away either morning or evening; the air was perfectly still, and no rain fell. This state of things continued till about the last week of October when several dust storms followed by rain took place, and from that time the disease seemed gradually to die away."

V. Local conditions.—The *drainage* of the lines is said to be fair. The *water* is taken from three tanks which are fed from the Bara cutting. It is all filtered in *ghurras* charged with sand and charcoal. The lines are of a better construction than those of the other Native Regiments at Peshawur. There was no *overcrowding*, as 100 men were on duty at Cherat, and 90 at Shubkudder.

VI. Preventive measures.—On the 13th October the occupants of the barrack in which the two first cases occurred moved to camp at Hurree Sing's Brooj. Only one occurred here on the 15th. On the 26th the party returned to cantonments.

No. 96, 26th Regiment N. I.

* *26th Regiment Native Infantry—Assistant Surgeon C. J. McKenna*—arrived at Peshawur, November 1871.

II. Details of the outbreak.

	Strength.	Amissions.	Deaths.
Officers	6	...	...
Men	642	14	3
Followers	...	1	1

Notes on outbreaks, Peshawur.

One of the cases was returned as "Peshawur fever," but the man died in 6¼ hours. Of the others nine were entered as "diarrhœa," but from the symptoms there can be no doubt that they were in reality cholera of a mild type. Including all these the cases occurred as follow, but among them is not entered the suspicious case of May which was probably also one of cholera:—

8th October	1
9th "	1
10th "	1
11th "	1
12th "	1
13th "	4
15th "	1
16th "	3
28th "	1
31st "	1
	15

The admissions from fever were	in the	week ending	30th August	23
Ditto	ditto	ditto	6th September	53
Ditto	ditto	ditto	13th "	94
Ditto	ditto	ditto	20th "	84
Ditto	ditto	ditto	27th "	95
Ditto	ditto	ditto	4th October	101
Ditto	ditto	ditto	11th "	77
Ditto	ditto	ditto	18th "	49
Ditto	ditto	ditto	25th "	57
Ditto	ditto	ditto	1st "	65
Ditto	ditto	ditto	8th November	48

III. Importation and communication.—There is no evidence that the first case had been due to importation, nor is any fact mentioned in the course of the outbreak which points to contagion as a means of spreading the disease. Of 25 persons who came in constant contact with the sick, none were attacked.

V. Local conditions.—*Drainage* is said to be bad. The *water* is got from two tanks which are fed by a branch of the Bara channel running through the lines. Attached to each is a very imperfect filtering apparatus.

VI. Preventive measures.—No general move was made into camp, but individual huts were vacated as they were attacked.

No. 97, 36th Regiment, N. I.

36th *Regiment, Native Infantry,—Assistant Surgeon A. B. Strahan,* M.B.

II. Details of the outbreak.

	Strength.	Admissions.	Deaths.
Officers	5	...	...
Men	604	5	4
Followers	...	2	...

The cases occurred on the 9th, 10th, 11th, 12th, 13th, 14th, and 15th October.

A considerable number of cases of diarrhœa occurred about the same time. There was no very marked increase in fevers.

III. Importation and communication.—The disease could not be traced to importation, nor was there any evidence of contagion. Of 14 persons who came in contact with the sick, not one was attacked.

In the *Sudder Bazar* there is a population of about 3,000.

II. Details of the outbreak.—Here there were only twelve cases and nine deaths; all between the 9th and 25th October. Taking all the bazars and Commissariat and other establishments amounting to about 13,000, there were 70 deaths. In 1867 and again in 1869 it may be noted, that the deaths in the sudder bazar alone were over 80. The water for the different bazars is taken from the cutting, a branch of which supplies each of them. The artillery bazar suffered very little, only three deaths were reported in it, and these were chiefly grass-cutters whose work took them away from the station.

In addition to the cases which have been already enumerated, a civil officer was attacked on the 9th October, and died next day. Two Staff Sergeants were attacked on the 15th, the children of one of them on the 16th, and an officer of R. E. on the 17th.

Peshawur, No. 98, Fort.

Peshawur Fort lies close to the city. Garrison consisted of two officers,—43 Europeans and 64 Sepoys.

II. Details of the outbreak.—On the 1st October as has been already stated, six men of the 6th Regiment were sent to hospital suffering from vomiting and purging, and of these one died after ten hours' illness. On the 7th October the detachment of the 6th Regiment was relieved by a party of similar strength of the 55th Regiment. Among them altogether there were six cases, two on the 9th, one on the 10th, one on 12th, one on 13th, and one on 16th. None of the natives suffered. These cases have already been entered in the statement for the 55th Regiment.

III. Importation and communication.—The first case could not be traced to importation, nor was there any evidence that the disease afterwards spread by contagion.

V. Local conditions.—The fort is well raised, and the natural *drainage* excellent. The cases described as having occurred on the 1st October, were attributed to the water

Notes on outbreaks, Peshawur.

which was then drawn from a well near the fort which is specially liable to contamination, both from its construction and from the fact that the Commissariat elephants are washed close by it. From the 7th the water was supplied from Mackeson's well in cantonments, and sent down in barrels daily. The natives drew their water from a well outside and opposite to the gate-way. The barrack occupied by the Europeans is low and not well ventilated.

VI. Preventive measures.—On the 10th this barrack was vacated, and the detachment which was not relieved as usual, but continued on duty at the fort from the 7th October to the end of the outbreak, encamped inside the fort. On the 16th they were removed immediately outside. The same water was continued in use, and no more cases occurred. When the Europeans moved outside, the native guard, which had remained unrelieved, was increased to 114 men.

Summary. The general distribution of the disease among the different communities of Peshawur is shewn in the annexed statement.

Statement showing the distribution of cholera at Peshawur in 1872.

Date.	City.		Fort.	Jail.	C-A Royal Horse Artillery.	A-8 Royal Artillery.		3-XXIII Royal Artillery.	9th Regiment.		55th Regiment.*		15th Bengal Cavalry.	16th Bengal Cavalry.	Sappers.	15th Native Infantry.	21st Native Infantry.	28th Native Infantry.	38th Native Infantry.	Bazars.†
	Cases.	Deaths.				Cantonment.	Camp.		Cantonment.	Camp.	Cantonment.	Camp.								
1st October ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2nd „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3rd „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4th „ ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5th „ ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7th „ ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...
8th „ ...	2	1	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	1	...	...
9th „ ...	6	3	2	...	...	...	...	...	1	...	2	...	2	...	...	...	2	1	1	...
10th „ ...	15	10	1	...	...	...	...	...	...	...	2	...	2	...	...	...	...	1	1	3
11th „ ...	...	13	...	...	...	...	...	...	1	...	4	...	4	...	...	...	...	1	1	1
12th „ ...	46	13	1	...	...	...	...	...	3	...	...	...	1	2	...	1	...	1	1	...
13th „ ...	25	29	1	...	...	...	...	...	...	...	4	3	...	1	...	3	1	4	1	2
14th „ ...	26	16	...	1	...	1	...	...	...	1	4	1	...	...	...	1	...	...	1	3
15th „ ...	17	10	...	...	...	...	...	...	...	1	2	...	...	2	...	1	1	1	1	5
16th „ ...	36	28	1	...	...	...	...	...	2	1	3	4	...	1	...	1	...	3	...	4
17th „ ...	24	19	...	...	...	1	...	...	...	2	1	1	...	1	1	1	...	...	...	5
18th „ ...	47	27	...	...	...	1	...	...	2	4	...	1	...	...	2	1	...	...	...	4
19th „ ...	21	18	...	...	...	...	...	1	...	3	...	1	...	1	...	...	...	...	...	6
20th „ ...	18	12	...	...	...	...	...	...	...	1	...	1	...	...	1	2	...	...	...	5
21st „ ...	16	9	...	...	...	1	...	...	...	1	...	...	...	...	...	...	2	...	...	7
22nd „ ...	11	9	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	3
23rd „ ...	9	11	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	5
24th „ ...	6	5	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1
25th „ ...	7	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
26th „ ...	6	4	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3
27th „ ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28th „ ...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2
29th „ ...	1	3	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1
30th „ ...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	4
31st „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
1st November	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
2nd „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3rd „ ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7th „ ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9th „ ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12th „ ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13th „ ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15th „ ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18th „ ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
20th „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21st „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22nd „ ...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	...	...	6	1	1	4	1	1	9	18	22	17	12	9	4	15	6	15	7	70

---

* Deaths registered.

† The sum of these two columns with 6 cases in the Fort makes up the total of 45 cases in this Regiment.

VII. Previous history.—Though generally free from cholera, violent outbreaks have occurred in several years, notably in 1867, 1869, and 1872.

Notes on outbreaks, Peshawur.

Statement of cholera at Peshawur, 1849 *to* 1872.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1849	European Troops -	1,191	...	...	...	3	2	...	...	1	1	1	...	2	10	2
1850	" " -	...	...	...	...	...	...	2	1	...	...	1	1	...	...	5*
1851	European Troops -	...	...	...	...	...	...	...	2	...	...	...	1	...	...	3*
	Native " -	6,649	...	...	1	...	2	1	...	2	...	...	...	...	6	4
1852	European Troops -	...	...	...	...	...	1	...	1	...	...	...	1	...	...	3*
	Native " -	7,563	1	...	...	...	3	...	...	1	...	...	3	...	8	2
1853	European Troops -	...	...	...	...	...	...	...	...	...	...	3	2	...	...	5*
	Native " -	6,765	1	...	...	...	2	1		...	...	...	1	1	6	...
1854	European Troops -	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1*
	Native " -	...	...	...	...	...	1	2	4	1	1	...	1	...	10	3
1855	European Troops -	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1*
	Native " -	18,486	...	...	...	...	1	1	...	...	...	...	...	1	3	3
1856	" " -	7,632	...	...	...	1	...	4	1	1	...	1	...	1	9	4
1858	European Troops -	2,027	...	...	...	...	...	...	...	...	...	4	3	...	7	7
	Native " -	...	1	...	...	...	2	...	2	2	...	7	7	1	22	14
	Prisoners -	420	...	...	...	...	...	...	...	...	...	...	6	...	6	4
1861	European Troops -	1,955	...	...	...	...	...	1	...	...	1	...	...	...	2	...
	Native " -	1,993	...	...	...	1	...	...	2	...	...	...	...	...	3	1
	Prisoners -	451	...	...	...	...	...	2	...	...	...	...	...	...	2	1
1862	European Troops -	1,970	...	...	...	...	...	...	73	14	13	63	5	...	168	97
	Native " -	2,908	...	...	...	...	1	...	13	...	1	21	2	...	38	22
	Prisoners -	371	...	...	...	...	...	...	23	...	...	23	...	...	46	23
1863	" -	355	...	...	...	...	...	...	...	...	...	1	...	...	1	...
1867	European Troops -	1,754	...	...	...	...	163	106	5	...	...	...	...	...	274	163
	Native " -	4,395	...	...	...	...	25	32	4	...	2	...	...	...	63	27
	Prisoners -	406	...	...	...	...	2	11	...	...	...	...	...	...	13	5
1868	Native Troops -	4,062	...	...	...	...	...	1	...	...	...	...	...	...	1	...
1869	European " -	2,050	...	...	...	...	...	...	...	...	359	16	2	...	377	241
	Native " -	3,380	...	...	...	...	...	...	...	3	158	17	1	...	179	111
	Prisoners -	411	...	...	...	...	...	...	...	...	24	3	4	...	31	13
1872	European Troops -	1,703	...	...	...	...	...	...	...	...	...	80	2	...	82	62
	Native " -	3,356	...	...	...	...	...	...	...	...	...	44	1	...	45	29
	Prisoners -	620	..	...	...	...	...	...	...	...	...	1	...	...	1	1

---

* Fatal cases only have been recorded.

Notes on outbreaks, Doaba Outposts.

DOABA OUTPOSTS—*Assistant Surgeon Macdonell*—consist of three small forts, each of which is garrisoned by 50 Native Cavalry and 90 Native Infantry.

No 99, Shubkudder.

II. Details of the outbreak.—At *Shubkudder*, which lies 20 miles north of Peshawur, a sowar was attacked with cholera on the 8th May. On the 14th September another sowar was attacked here, and three days afterwards there was a very suspicious case which presented many of the symptoms of cholera. The medical officer, however, believes that it was one of Peshawur fever.

III. Importation and communication.—There is no history of importation or contagion in any of these cases. None of the attendants were attacked.

No. 100, Abuzai.

II. Details of the outbreak.—At *Abuzai*, which is situate 8 miles further on, a sowar was attacked on the 22nd October, the only case within this fort.

III. Importation and communication.—It could not be traced to importation.

Michnee, 8 miles to the west of Shubkudder, entirely escaped.

No. 101, Cherat.

CHERAT is a hill 27 miles from Peshawur, on which at a height of 4,400 feet above the sea, a portion of the Peshawur garrison has been encamped of late years during the hot weather and rains. In 1872 the strength was 720 Europeans and 80 Native soldiers.

II. Details of the outbreak.—On the 25th October a Private of the 55th Regiment was attacked with cholera; he recovered.

III. Importation and communication.—His seizure was attributed to indulgence in fruit It could not be explained by importation, nor did any other attacks follow.

Kohat.

KOHAT—(Surgeon H. Thom, M.D., Assistant Surgeon E. Sanders)—lies to the south and south-west of Peshawur, separated from it by a range of hills through which there is only one communication over the Kotul. Along the east and south-east it is bounded by the Indus, so that it is much isolated from Hindoostan. The district is very rugged, and consists of numerous barren hills with cultivated valleys between. With an area of 2,838 square miles, it has a population of only 1,45,419. There are 343 villages. The city has a population of 6,064, and lies close to the military station. When cholera appeared the garrison, which is composed entirely of Native Troops, consisted of 2 Batteries of Artillery, one Regiment of Cavalry, and three of Infantry.

II. Details of the outbreak.—The registration returns show 351 deaths from cholera in the Kohat district throughout the year, 94 of which occurred in August, 228 in September, and 29 in October. Except in the valley of the Toey there is not much irrigation, and it was this portion of the district which chiefly suffered. Unlike the system followed in the places which have been already included in these notes, the deaths among the troops are included in the statistics of the district. Taken by themselves the number of cases and deaths among the different regiments was as follows :—

	FIGHTING MEN.			FOLLOWERS.		
	Strength.	Admissions.	Deaths.	Strength.	Admissions.	Deaths.
Hazara Mountain Battery ...	118	2	2	159	7	4
Garrison Company of Artillery ...	38	2*	...	35	1	...
1st Punjab Cavalry	277	12	8	517	25	21
2nd Seik Infantry	576	17	14	433	7†	5
4th " "	563	16	11	303	8	4
3rd Punjab "	466	41	23	275	22	15
Sudder Bazar	...	...	...	...	6	4

* One of these was a European Sergeant.

† One of these the European Bandmaster.

or a total of 166 cases and 111 deaths.

No. 102, Hazara Mountain Battery.
No. 103, Garrison of Artillery.
No. 104, 1st Punjab Cavalry.
No. 105, 2nd Seik Infantry.
No. 106, 4th Seik Infantry.
No. 107, 3rd Punjab Infantry.

The first case recorded as cholera occurred at 2 A.M. of the 20th August. The ma was a pensioned servant of an officer and lived in the line of the second Seik Infantry. Towards midnight of tha same day three cases were reported in the 1st Punja Cavalry lines. At the same time a case occurred in th village of Bezadi, or Chickurkote for it bears both names which lies on the skirt of cantonments and close to the 4t Seik Infantry lines. "From noon on the 20th till noon on the 21st August 11 cases o cholera of a malignant type had occurred in cantonments, six cases had proved fatal, and the rest appeared to be moribund." The daily distribution of the disease throughout the outbreak is given in the following statement:—

Notes on outbreaks, Kohat.

Cholera at Kohat in 1872.

Date.	Hazara Mountain Battery.	Garrison Companies of Artillery.	1st Punjab Cavalry.	2nd Seik Infantry.	4th Seik Infantry.	3rd Punjab Infantry.	Sudder Bazar.	Total cases in cantonments daily.	Kohat city.	Jail.	Bezadi *alias* Chickurkote.	Jungulpeer Kheyl.
20th August ...	...	...	2	1	...	...	...	3	...	...	1	...
21st " ...	1	...	3	...	1	3	...	8	...	...	...	...
22nd " ...	1	...	1	...	1	...	...	3	...	...	...	...
23rd " ...	1	...	1	1	...	1	...	4	2	...	3	...
24th " ...	3	...	4	2	...	...	...	9	...	...	2	...
25th " ...	1	...	2	1	1	1	...	6	...	...	2	...
26th " ...	...	...	...	3	...	...	...	3	...	...	...	...
27th " ...	...	...	...	...	...	2	...	2	1	...	2	...
28th " ...	1	...	9	...	2	6	...	18	3	...	4	...
29th " ...	...	...	4	3	2	5	2	16	1	...	...	...
30th " ...	1	...	2	1	2	7	...	13	2	...	3	...
31st " ...	...	...	4	...	1	6	...	11	1	...	4	1
1st September ...	...	...	1	2	1	3	...	7	4	...	1	...
2nd " ...	...	...	1	2	2	3	1	9	4	...	...	...
3rd " ...	...	...	...	1	3	3	...	7	1	...	...	1
4th " ...	...	...	...	...	2	3	...	5	1	...	...	3
5th " ...	...	...	1	3	...	2	...	6	3	...	...	8
6th " ...	...	...	...	1	1	...	...	2	2	...	..	6
7th " ...	...	...	1	...	1	3	...	5	3	...	...	3
8th " ...	...	...	...	1	1	2	...	4	...	...	...	4
9th " ...	...	...	...	...	1	...	...	1	3	...	...	2
10th " ...	...	...	...	...	...	2	...	2	2	1	...	2
11th " ...	...	...	1	...	...	4	...	5	...	...	...	4
12th " ...	...	...	...	...	...	1	...	1	3	...	...	1
13th " ...	...	1	...	...	...	...	1	2	2	3	...	3
14th " ...	...	...	...	1	...	1	...	2	1	...	...	...
15th " ...	...	...	...	...	...	...	...	...	3	...	...	...
16th " ...	...	1	...	1	...	...	...	2	2	...	...	4
17th " ...	...	...	...	...	1	3	...	4	1	1	...	1
18th " ...	...	1	...	...	...	1	2	4	4	...	...	...
19th " ...	...	...	...	...	...	...	...	...	1	...	...	...
23rd " ...	...	...	...	...	...	1	...	1	...	...	...	...
26th " ...	...	...	...	...	...	...	...	...	1	...	...	...
30th " ...	...	...	...	...	1	...	...	1	...	...	...	...
TOTAL ...	9	3	37	24	24	63	6	166	51	5	22	43

In the city the disease was prevalent chiefly between the 28th August and 18th September. The Deputy Commissioner's special returns show 48 cases and 24 deaths here in all. The mortuary register, which is evidently most imperfect, records only four deaths from cholera. The village of Jungulpeer Kheyl, which lies close to the small fort, and about half a mile from the city, suffered much. Here 43 cases were reported, of which 36 were fatal. From the information furnished by the Deputy Commissioner columns have been added to shew the prevalence of cholera in the city and in the villages of Jungulpeer Kheyl and Bezadi, but from enquiries made on the spot, I believe that the extent of the outbreak is greatly understated in these figures. Other villages near the station also suffered. At Gurree Atta Khan, a hamlet close to the General Hospital, there were two cases, one on the 28th August, and the other on the 31st. At Bagnugger further down the small stream to which reference will be made hereafter, there were four cases, the first on the 26th August, and the last on the 13th September. At Hungoo, 26 miles from Kohat, the disease appeared on the 24th August, and lasted till the 28th October. Altogether in the district there are said to have been 517 cases. The disease was not so severe as in 1869, but it was more widely diffused. Even among the troops, many cases of cholera appear to have been returned as diarrhœa. The great increase of this affection while cholera prevailed is shown by the weekly returns of admissions into hospital, from which the following figures have been extracted. Not a few of the cases were severe and attended with vomiting.

Notes on outbreaks, Kohat.

Number of admissions into hospital from Diarrhœa among the troops at Kohat for each week from 19th July to 18th October 1872.

Week ending.	Hazara Mountain Battery.	Garrison Company of Artillery.	1st Punjab Cavalry.	2nd Seik Infantry.	4th Seik Infantry.	3rd Punjab Infantry.	TOTAL.
26th July	...	...	...	1	...	1	2
2nd August	...	...	...	1	2	3	6
9th „	...	...	...	1	2	2	5
16th „	...	...	2	1	1	4	8
23rd „	3	...	1	3	2	4	13
30th „	2	..	3	1	4	9	19
6th September	3	...	8	8	6	19	44
13th „	1	...	2	5	...	7	15
20th „	...	...	3	3	1	7	14
27th „	...	...	...	2	4	7	13
4th October	...	...	...	2	1	5	8
11th „	1	...	1	1	2	4	9
18th „	...	...	...	2	2	5	9

With the appearance of cholera fevers, the ordinary malarious intermittents, became prevalent and continued so for some time after cholera had ceased.

Number of admissions into hospital from Fevers among the troops at Kohat during each week from 19th July to 18th October 1872.

Week ending.	Hazara Mountain Battery.	Garrison Company of Artillery.	1st Punjab Cavalry.	2nd Seik Infantry.	4th Seik Infantry.	3rd Punjab Infantry.	TOTAL.
26th July	3	...	8	7	9	5	32
2nd August	3	1	2	9	6	19	40
9th „	8	2	3	19	16	17	65
16th „	8	1	6	15	10	28	68
23rd „	3	...	4	14	31	30	82
30th „	7	1	4	18	17	46	93
6th September	10	1	9	38	39	59	146
13th „	8	4	12	32	33	48	137
20th „	8	4	15	51	27	50	155
27th „	12	3	15	36	24	50	140
4th October	5	1	13	70	21	51	161
11th „	12	1	11	58	22	54	158
18th „	4	1	12	29	22	47	116

III. Importation and communication.—The first case could not be traced to importation. The man had been for 10 months in Kohat. So far as could be ascertained, he had been nowhere and had received no visitors. It was supposed that perhaps the large party of native soldiers, between two and three hundred in number, who returned from leave on the 15th August, might have imported the disease, but enquiry altogether failed to elicit any fact in favor of this idea. No symptom of cholera had appeared among any one of them. Moreover, although the date of the first case of cholera at Kohat is set down as the 20th August several very suspicious cases had occurred before that date. On the 12th August, a sepoy of the 2nd Seiks came into hospital with severe vomiting, cramps, and suppression of urine; he recovered. In the end of June or beginning of July, the exact date not known, there had been another suspicious case of a similar character in the 4th Seiks; he also recovered. A man of the 2nd Seiks who was attacked with cholera on the 20th had been admitted on the 16th August, suffering from diarrhœa. As regards evidence of contagion

Notes on outbreaks, Kohat.

some instances are cited. Dr. Thom states that a sepoy was attacked on the 23rd September while in attendance on a man ill of cholera. He had been in attendance for eleven days. A khalasee was seized on the 29th August. His attendant after being with him for nine days, was attacked. Dr. Sanders states that on the 23rd August a man, who had attended the first case on the 20th, was himself attacked. With regard to this case it must be noted that on the 22nd August, a patient in this same hospital and who had not come in contact with any case of cholera, was also attacked. Each case had at least one attendant, so that the number of those who came in immediate contact with the sick must have been large. It is stated that of 51 sepoys who were employed on this duty in the 3rd Panjáb Infantry, 12 were seized. Of these four were attacked in hospital while actually in attendance, one had been on this duty for 20 days before attack, another eight days, a third six days, and a fourth seven days. The remaining eight were attacked in the lines. The first was seized five days after returning to the lines, the second on the fourth day, the third on the third day, the fourth and fifth on the fourth day, the sixth on the third day, and the seventh on the seventh day. Regarding the eighth, the date of returning to the lines is not given. The European Sergeant assisted in putting the Band Master into his coffin on the 18th August. He was attacked the same evening. A sepoy who went to the burning of a person who died of cholera was attacked, but the dates are not known. The last cases in the district occurred on the Kotul on the 7th and 8th November after cholera had for some time ceased elsewhere. They occurred, two in the towers not far from the camp in which the arrivals from Peshawur were then quarantined, and three in this camp. The watchmen attacked had no duty to bring them in contact with this camp, but it is supposed that the disease may have been imported by the camp arrivals. The guard over the camp did not suffer. In three of a few cases in which witnesses came into Kohat to give evidence, they were attacked by cholera. In the city the sick remained in their houses. There is no reason to conclude that the cases served as centres from which the disease spread. It was widely diffused.

IV. Meteorology.—On this point Dr. Thom writes—" On the afternoon of the 19th August Kohat was visited by a terrible gale of wind followed by heavy rain. Trees were uprooted and thrown down in many places, and several parts of the solid brick roof of the station hospital were stripped off by the violence of the wind. On the following day there was bright sunshine, but the weather was excessively sultry and oppressive."

V. Local conditions, drainage.—The cantonment occupies high ground, and has excellent natural *drainage*. On the skirts of it, however, the land is comparatively low. *Water.*—The supply is mainly drawn from a fine spring which issues close to the village of Jungulpeer Kheyl. Formerly this flowed on in an open channel, but arrangements were sanctioned for conveying it in a covered duct to the different regiments. The work, however, had not been completed when cholera appeared. The duct after running about 250 yards from the spring divides into three branches, one to the 3rd Panjáb Infantry lines, one to the 4th Seik lines, and the centre one to the second Seiks. The branch for the 3rd Panjáb Infantry is prolonged to the General Hospital, but had not been used. There are two covered reservoirs in the 2nd Seik lines, one for the 3rd Panjáb Infantry, one for the 4th Seiks, and one for the hospital compound, but the two last were not in working order. One of the two reservoirs in the 2nd Seik lines was closed on 20th August, as the duct which supplies it runs through a filthy neighbourhood, and the ducts although covered are by no means impervious. In addition to the water conveyed in the ducts a considerable open stream which takes its rise in the same spring which feeds the ducts flows through the station dividing the cavalry and 3rd Panjáb Infantry lines. It commences at the village of Jungulpeer Kheyl, and after passing through the cantonment, supplies the villages of Atta Khan ka Gurree and Bagnugger which have no wells. Another stream rising from a different source after passing through a portion of the city, skirts the city wall, and flows past the 4th Seik lines. The sepoys seem to use this most. It goes on past the village of Chickurkote in which there are no wells. The people in Jungulpeer Kheyl all drink from wells of which there are many. The water-supply of the city is drawn chiefly from wells, of which there are 166, but in addition there are two springs led in underground channels with openings here and there, and there is also a branch of the Kohat river or Tóéy. The drinking water, it appears, is drawn from the wells. It is doubtful how far the men in any of the regiments drank from the reservoirs, and how far from other sources, but this is of less importance as the ducts had not been covered. In the 2nd Seik lines there are some wells and there are also wells in the sudder bazar. The duct carries two gallons per second. The stream which carries off the spring and flows between the 3rd Panjáb Infantry and Cavalry lines, is of considerable size and flows rapidly. *Conservancy.*—There are no latrines, and the neighbouring country is resorted to.

VI. Preventive measures.—From the 21st August to the 17th October *quarantine* was established at the three ferries on the Indus between the districts of Rawul Pindee and Kohat. At none of them was a case of cholera detected. *Movement.*—On the 21st August the first Panjáb Cavalry moved into camp on their parade ground. As the disease continued the main body marched on the 23rd to Mahomedzai 5 miles on the Hungoo road. Here there were only seven cases, six of which occurred among grass-cutters, who had been into cantonments. The detachment left behind on the parade ground suffered severely. Of a strength of between 50 and 60, there were sixteen cases between the 23rd and 28th August. At Mahomedzai, the cavalry drank from the Tóéy river before it reaches Kohat. The

Notes on outbreaks, Kohat.

detachment drank from the spring stream which runs through the cantonment. The parade ground is in the immediate vicinity of ground used for latrine purposes. On the 24th the Mountain Battery joined the 1st Cavalry at Mahomedzai. Three cases followed, one in camp on the 30th August, and two in the detachment left behind in cantonment. On the 27th the 2nd Seiks marched to Dhoda, leaving a detachment of 300 in cantonment. Eight cases had occurred in this regiment before moving. Of the sixteen which followed, seven were in cantonment, and nine in camp. Dhoda is near the Tóéy after it has passed Kohat. It is here a considerable stream, but the men drank chiefly, if not altogether, from an abundant spring. On the 28th the 3rd Panjáb Infantry encamped on the Rawul Pindee road about ½ of a mile from cantonments, leaving the married people and guards behind them. Dr. Thom writes:—"Every sepoy in the 3rd Panjab Infantry attacked by cholera after the 28th August had been employed on some duty or other in cantonments either on the day of attack or on one or two days previously." To this camp water was supplied from the 2nd Seik Infantry lines. On the 29th the 4th Seiks marched to Chumbai, 7 miles to the south-west. Only two cases occurred in camp, one on the 7th, and one on the 8th September. The other 15 noted after this date were all among the party left in cantonments. In camp they had spring water.

The *fort* is very small and lies close to the city. It was garrisoned by a company of artillery and 54 men of the 2nd Seiks who were kept isolated as much as possible. There were three cases among the artillery—a native gunner, his child who, however, lived in the city, and the European Sergeant already mentioned. On the 23rd August a sepoy of the 2nd Seiks, one of the detachment sent on guard that day, was attacked. The water is drawn from a well inside.

No. 108, the Jail.

In the *Jail* and *Lock-up* which immediately adjoin the city, there were 189 prisoners. On the 10th September the first case occurred, a prisoner was attacked in one of the workshops. On the 13th a case appeared in the lock-up, and the same day one of the police in the barrack in front of the lock-up. There was also a doubtful case in the party which had been encamped in the jail garden. On the 17th September another case followed in the jail.

III. Importation and communication.—The cases could, in no instance, be traced to contagion.

V. Local conditions.—The prisoners drink from one well inside. A bathing reservoir has, within the last few years, since 1869, been sunk immediately beside this well. It is very objectionable, especially as the floor was out of repair.

VI. Preventive measures.—Buildings attacked were vacated at once, and the inmates placed in tents in the garden. "The water-supply was all along derived from the jail well, when the prisoners were in camp, and the police and the prisoners in the lock-up got their supply from two wells in front of the lock-up." The policeman attacked on the 13th had just received a reward of Rs. 100 for some special service, and had expended a portion of it on a feast of sweetmeats.

VII. Previous history.—The outbreak of 1872 although severe was much less violent than that of 1869, in which among the troops alone not including followers there were 190 cases and 136 deaths. The outbreaks in other years were comparatively trivial.

Statement of cholera at Kohat, 1851 *to* 1872.

Years.		Average Strength.	Number of Cases.												Total Cases.	Total Deaths.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
1851	Native Troops	2,387	...	...	...	...	...	...	...	2	...	...	...	...	2	2
1852	Ditto	1,964	...	...	...	...	...	...	1	...	1	3	...	...	5	3
1853	Ditto	2,331	...	1	...	...	1	...	...	...	...	...	...	...	2	1
1854	Ditto	...	...	...	...	...	...	...	...	1	...	...	1	...	2	...
1856	Ditto	3,268	...	...	...	...	1	...	...	...	...	...	...	...	1	...
1858	Ditto	...	...	...	...	...	...	...	...	...	...	21	18	...	39	18
1862	Native Troops	...	...	...	...	...	1	8	31	...	...	12	...	...	52	25
	Prisoners	114	...	...	...	...	...	...	...	...	...	1	...	...	1	...
1863	Native Troops	...	...	...	...	3	...	...	...	1	...	...	...	...	4	2
1869	Native Troops	2,395	...	...	...	...	...	...	...	...	...	188	2	...	190	186
	Prisoners	144	...	...	...	...	...	...	...	...	1	...	1	...	2	1
1872	Native Troops	2,222	...	...	...	...	...	...	...	44	46	1	...	...	91	59
	Prisoners	181	...	...	...	...	...	...	...	...	3	...	...	...	3	3

Statistics of general population.

A.

Statement showing the deaths registered from cholera in BENGAL PROPER *during each month of* 1872.

DISTRICTS.	Population according to Census of 1872.	NUMBER OF CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
24-Pergunnahs ...	2,210,047	968	468	236	122	87	50	17	43	38	73	261	729	3,092
Calcutta ...	447,601	80	81	64	70	66	55	71	79	61	86	181	248	1,142
Howrah ...	1,488,556	151	83	47	47	28	7	8	23	9	25	90	258	776
Serampore and Hooghly		87	46	72	39	17	16	30	92	30	44	83	93	649
Nuddea ...	1,812,795	584	474	168	357	236	7	50	21	2	5	3	82	1,989
Jessore ...	2,075,021	755	251	212	178	92	36	18	9	17	7	76	520	2,171
Burdwan ...	2,034,745	140	91	113	196	170	216	130	213	288	106	97	398	2,158
Bancoorah ...	526,772	34	16	...	1	44	50	53	20	17	...	2	31	268
Beerbhoom ...	695,921	26	7	32	29	24	8	21	51	84	32	156	256	726
Midnapore ...	2,540,963	108	192	82	94	65	26	31	7	...	6	43	106	760
Dacca ...	1,852,993	62	31	27	95	90	35	30	7	13	6	78	296	770
Furreedpore ...	1,012,589	291	41	21	37	12	1	1	2	1	...	4	17	428
Backergunge ...	2,377,433	111	86	186	234	122	28	29	13	21	8	33	209	1,080
Mymensing ...	2,349,917	51	26	29	71	41	8	1	2	1	1	96	554	881
Darjeeling ...	94,712	...	...	...	22	43	57	52	28	...	...	1	2	205
Julpigoree ...	418,665	8	2	2	7	11	21	35	16	5	29	97	298	531
Gowalparah ...	444,761	91	74	8	4	2	30	124	125	8	12	192	192	862
Morshedabad ...	1,353,626	89	104	186	99	13	...	1	1	9	1	1	35	539
Dinagepore ...	1,501,924	423	78	176	130	71	8	...	...	...	38	103	373	1,400
Maldah ...	676,426	9	14	1	1	5	1	2	11	...	...	1	7	52
Rajshahye ...	1,310,729	188	50	60	103	23	...	1	1	...	2	...	1	429
Rungpore ...	2,149,972	57	4	18	18	62	27	69	73	93	195	402	967	1,985
Bogra ...	689,467	59	9	3	9	...	...	...	1	...	...	...	23	104
Pubna ...	1,211,594	110	23	24	147	92	13	10	1	...	1	2	83	506
Purneah ...	1,714,795	...	20	1	14	59	18	30	5	14	28	151	16	356
Chittagong ...	1,127,402	151	86	114	127	275	196	84	12	37	10	45	165	1,302
Noakhally ...	713,934	25	28	31	16	20	7	...	...	...	4	25	205	361
Tipperah ...	1,533,931	50	16	85	46	55	1	5	2	...	5	133	517	865
Cachar ...	205,027	2	31	144	404	170	...	4	6	3	...	...	18	782
Sylhet ...	1,719,539	16	...	36	204	148	25	14	1	1	...	21	58	524
Durrung ...	236,009	60	38	56	26	56	66	56	17	2	7	27	97	508
Nowgong ...	256,390	161	17	7	1	2	117	29	6	...	...	12	...	352
Seebsaugor ...	296,589	71	...	...	...	...	193	60	10	42	337	1,362	999	3,074
Kamroop ...	561,681	589	215	79	95	341	312	176	86	56	45	14	18	2,026
Luckimpore ...	121,267	...	...	...	...	...	...	...	4	1	...	50	39	94
Jynteah Hills ...	141,838	...	...	...	...	...	...	...	...	...	1	2	...	3
Balasore ...	770,232	35	53	189	278	250	346	60	21	10	14	1	5	1,262
Cuttack ...	1,494,784	11	64	322	573	609	619	551	113	57	26	3	4	2,952
Pooree ...	769,674	2	57	82	177	111	486	203	33	41	3	6	6	1,207
Rajmehal ...	1,259,287	2	...	...	1	...	...	...	...	...	...	...	4	7
Deoghur ...		12	7	27	31	17	12	11	...	...	3	...	...	120
Purulea ...	995,570	13	3	3	...	63	139	56	3	4	...	2	3	289
Hazareebaugh ...	771,875	...	...	15	14	24	38	15	1	2	1	1	...	111
Ranchee ...	1,237,123	1	...	7	4	5	3	21	2	1	1	...	1	46
Chyebassa ...	415,023	1	3	1	8	2	1	...	1	2	4	...	4	27
Monghyr ...	1,812,986	...	...	28	30	92	395	253	99	27	2	3	1	930
Bhaugulpore ...	1,826,290	...	...	29	12	3	5	31	35	44	35	12	2	208
Gya ...	1,949,750	2	3	3	50	240	494	550	369	54	11	14	2	1,792
Patna ...	1,559,638	10	1	12	23	42	319	333	315	52	18	2	22	1,149
Shahabad ...	1,723,974	30	...	1	29	54	171	51	48	60	41	55	...	540
Sarun ...	2,063,860	3	8	7	4	24	59	84	155	142	28	4	...	518
Tirhoot ...	4,384,706	52	4	...	5	69	188	83	308	400	297	65	19	1,490
Chumparun ...	1,440,815	...	...	...	2	51	65	36	83	191	75	...	...	503
												TOTAL	...	46,901

Statistics—general population.

B.

Statement showing the deaths from Cholera registered in the different districts of the North-Western Provinces *during each month of* 1872.

Districts.	Population, Census of 1872.	Cholera deaths registered in each month.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Eastern Districts of the North-Western Provinces.														
Ghazeepore ...	1,454,000	15	11	26	26	94	169	92	132	36	4	...	11	619
Benares ...	793,433	25	21	84	361	381	187	88	86	75	56	29	19	1,412
Mirzapore ..	1,087,200	5	4	71	372	474	273	205	172	32	8	2	...	1,618
Azimghur ...	1,497,580	9	19	33	618	998	472	125	184	39	28	55	12	2,592
Jounpore ...	1,022,555	11	14	1,147	5,788	1,113	132	21	15	9	...	1	...	8,251
Goruckpore ...	2,044,821	...	...	60	528	1,297	698	47	39	66	119	94	56	3,004
Bustee ...	1,487.572	3	...	92	2,670	3,987	2,458	153	10	1	132	6	25	9,537
Allahabad ..	1,382,826	...	17	239	1,894	1,034	299	39	46	26	18	1	2	3,615
Futtepore ...	661,585	2	...	5	6	119	151	65	57	73	38	7	1	524
Cawnpore ...	1,152,628	...	2	...	6	413	541	270	131	162	81	2	1	1,609
Futteghur .	919,091	2	...	4	1	31	111	329	1,321	540	195	4	...	2,538
Districts of the N. W. Provinces, south of, or bordering on, the Jumna.														
Banda ...	696,443	...	2	1	11	2	27	13	55	91	...	...	...	202
Hameerpore ...	527,540	...	...	...	...	9	36	9	21	1	...	...	1	77
Jaloun ...	400,781	...	...	...	...	...	16	7	7	36	...	...	...	66
Etawah ...	671,247	1	1	...	1	13	416	489	419	97	12	...	1	1,450
Jhansie ...	311,773	...	...	...	...	...	...	...	...	...	...	...	...	...
Lulutpore ...	214,593	...	...	...	...	2	...	...	...	...	...	...	...	2
Districts of the N. W. Provinces lying west of the line of 80° east longitude.														
Bareilly ...	1,506,547	14	4	2	11	7	9	30	75	330	717	270	30	1,499
Budaon ...	934,454	2	3	13	17	8	14	9	14	209	555	26	2	872
Shahjehanpore ...	945,705	3	3	5	8	9	12	66	1,318	1,214	1,449	306	10	4,403
Moradabad ...	1,118,943	6	6	7	21	21	11	12	59	403	569	14	2	1,131
Etah ...	700,688	...	...	...	4	7	12	17	192	87	20	1	...	340
Mynpooree ...	753,971	..	...	...	2	...	11	83	133	101	31	5	...	366
Alyghur ...	1,057,939	1	...	3	3	5	38	31	132	497	79	9	1	799
Boolundshahar ...	936,733	1	2	5	10	6	20	12	185	166	9	1	2	419
Agra ...	1,097,425	1	3	...	13	33	80	144	126	48	3	...	1	452
Muttra ...	892,542	1	1	3	23	55	47	56	100	91	25	4	...	407
Meerut ...	1,271,454	1	4	6	2	26	88	13	127	222	19	1	1	510
Mozuffernugger ...	704,000	1	2	...	2	5	8	1	5	9	...	...	2	35
Saharanpore ...	880,663	18	4	14	18	84	65	18	691	366	61	7	2	1,351
Bijnour ...	714,415	4	1	7	9	19	26	7	11	31	73	26	6	220
Deyrah ...	116,981	..	1	...	...	...	1	54	175	11	8	...	...	250
Terai Pergunnahs ...	185,647	...	...	...	...	...	...	...	...	25	153	165	26	369
Kumaon ...	430,300	...	2	4	...	...	...	...	...	...	...	...	20	26
Ghurwal ...	309,947	...	...	...	...	...	...	...	...	...	...	...	...	...
											Total		...	50,565

C.

Statement showing the deaths from cholera registered in the different districts of Oudh during each month of 1872.

Districts.	Population, Census of 1869.	Cholera deaths registered in each month.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Pertabgurh ..	782,672	6	28	1,128	3,628	1,251	88	...	...	...	...	...	...	6,129
Rae Bareilly ...	989,008	26	...	38	159	993	1,071	167	43	31	...	35	20	2,583
Sultanpore ...	996,456	184	20	447	1,114	460	116	14	5	4	...	...	...	2,364
Fyzabad ...	1,025,718	2	3	...	197	397	77	19	18	13	36	82	5	849
Barabunkee ...	1,102,165	33	...	47	432	518	294	89	68	18	...	37	...	1,536
Lucknow ...	789,465	...	...	...	43	242	443	238	159	26	48	28	18	1,245
Oonao ...	945,955	...	...	...	2	253	689	344	355	165	100	18	...	1,926
Gondah ...	1,168,462	...	...	1	262	1,835	745	91	77	215	289	21	6	3,545
Baraich ...	774,640	...	...	...	141	531	406	294	196	127	316	191	54	2,256
Kheree ...	746,340	..	...	...	1	1	5	5	86	109	180	34	14	435
Seetapore ...	932,959	...	...	...	73	176	11	18	16	124	160	17	...	595
Hurdui ...	931,517	...	...	...	...	60	375	702	974	581	395	16	...	3,103
											Total		...	26,566

Statistics—general population.

D.

Statement showing the deaths from Cholera registered in the different districts of the PUNJAB *during each month of* 1872.

DISTRICTS	Population, Census of 1868.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Goorgaon	690,522	...	1	3	3	2	54	30	62	7	...	...	...	162
Delhi	608,850	...	...	...	1	29	119	4	53	12	1	...	...	219
Rhotuck	536,995	...	...	...	1	...	...	2	...	...	...	...	...	3
Hissar	484,681	1	...	...	2	28	21	16	5	1	...	...	...	74
Sirsa	210,795	...	...	...	3	11	25	40	18	2	...	...	...	99
Kurnal	610,927	...	1	...	27	476	377	59	118	31	...	...	...	1,089
Umballa	1,008,952	1	1	...	51	463	298	39	173	88	6	1	...	1,121
Simla	34,173	...	...	...	...	...	...	5	...	...	...	...	...	5
Jullundur	783,020	...	...	2	1	1	1	14	149	196	43	...	2	409
Loodiana	583,445	1	1	1	...	...	9	42	468	195	...	...	...	717
Hooshiarpore	938,890	...	1	3	4	27	30	18	332	288	18		...	724
Kangra	744,162	...	4	1	4	10	3	3	10	105	29	5	...	174
Goordaspore	906,126	4	6	1	...	15	7	79	208	444	99	...	...	863
Sealkote	994,458	1	...	...	...	...	2	27	38	188	27	...	...	283
Umritsur	832,750	1	1	1	...	...	3	5	44	39	...	...	...	94
Goojrat	616,347	1	1	1	...	1	...	2	27	35	...	...	...	68
Goojranwallah	550,576	1	1	...	...	...	7	...	155	171	17	...	...	352
Lahore	775,551	1	2	1	...	6	7	62	461	85	2	2	...	629
Ferozepore	533,416	...	...	1	...	...	2	25	122	126	42	4	...	322
Montgomery	359,437	...	...	...	...	...	2	...	1	2	...	...	...	5
Mooltan	459,780	...	...	1	...	...	...	...	...	...	1	...	...	2
Mozuffurgurh	295,547	...	...	...	...	1	...	...	2	...	...	...	...	3
Dera Ghazee Khan	308,840	...	...	...	...	..	...	...	1	...	...	...	...	1
Dera Ismael Khan	394,864	...	...	1	...	...	...	...	...	6	15	...	...	22
Jhung	348,027	...	1	...	...	...	...	...	...	...	...	...	...	1
Shahpore	368,796	...	...	...	...	...	...	...	34	9	...	...	...	43
Jhelum	500,988	...	...	...	...	2	6	15	252	6	...	...	..	281
Hazara	367,218	...	1	...	1	...	1	...	...	50	14	1	...	68
Rawul Pindee	699,647	...	...	...	...	...	3	2	30	107	6	...	..	148
Peshawur	500,443	...	...	1	...	1	1	...	2	1	310	76	...	392
Kohat	145,419	...	...	...	...	...	...	...	94	228	29	...	...	351
Bunnoo	287,547	...	...	...	...	...	...	...	...	2	1	...	...	3
											TOTAL		...	8,727

E.

Statement showing the deaths from Cholera registered in the different districts of the CENTRAL PROVINCES *during each month of* 1872.

DISTRICTS.	Population, Census of 1866.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Raipúr	841,622	...	...	...	...	...	...	...	...	...	...	...	...	...
Bilaspúr	478,056	...	...	...	...	...	...	...	...	...	...	...	...	...
Sambalpúr	268,296	...	...	...	...	...	...	...	...	...	...	...	...	...
Jabalpúr	380,826	...	...	...	...	...	4	26	23	1	...	...	...	54
Seoni	421,650	...	...	...	...	...	...	...	...	...	...	...	...	...
Mandla	187,699	...	...	...	...	...	...	...	...	...	...	...	...	...
Narsingpúr	336,796	...	...	...	1	...	...	...	11	12	13	13	...	50
Murwara	218,391	...	...	...	...	...	...	...	...	...	...	...	...	...
Damoh	283,625	...	...	...	...	...	...	12	3	...	...	...	...	15
Sagar	498,642	...	...	...	...	...	...	...	...	...	...	...	...	...
Chindwarah	260,930	...	...	...	...	...	...	...	...	...	...	...	...	...
Baitool	258,230	...	...	...	...	...	...	...	...	...	...	...	...	...
Hoshangabad	399,430	31	11	1	...	...	1	5	27	30	47	...	...	153
Nimar	124,832	...	...	39	177	50	177	192	179	43	...	...	...	857
Bhandara	608,510	...	...	...	...	...	...	...	...	...	...	...	...	...
Nágpúr	649,342	...	...	...	...	1	3	12	8	...	...	...	...	24
Balaghat	170,934	...	...	...	...	...	...	...	...	...	...	...	...	...
Wardah	343,269	...	...	...	...	...	...	...	205	62	...	...	...	267
Chanda	414,951	...	...	...	...	...	...	...	...	...	...	...	7	7
Upper Godavery	54,684	...	...	...	...	...	...	...	...	...	...	...	...	...
Burhanpúr	65,675	...	...	1	6	60	29	38	31	...	...	...	...	165
											TOTAL		...	1,592

Statistics—general population.

F.

Statement showing the deaths from Cholera registered in the different districts of BERAR *during each month of* 1872.

Districts.	Population according to census of 1867.	Cholera deaths registered in each month.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Akolah	480,657	...	...	...	...	...	...	21	112	63	18	...	...	214
Buldanah	365,779	5	2	...	...	...	...	17	103	41	20	2	...	190
Bassim	260,905	...	...	...	...	...	...	31	229	60	...	...	...	320
Oomrawuttee	496,379	...	...	...	...	...	2	35	148	40	85	...	2	312
Ellichpúr	237,799	...	...	...	...	...	...	...	...	2	6	...	...	8
Woon	343,426	...	...	...	...	...	...	2	226	244	47	2	13	534
											Total		...	1,578

G.

Statement of deaths from Cholera registered in the different districts of the BOMBAY PRESIDENCY *during each month of* 1872.

Districts.	Estimated population.	Cholera deaths registered in each month.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Bombay city	6,44,405	7	2	4	7	6	7	46	54	33	11	3	11	191
Tanna	8,49,638	...	...	...	...	...	9	27	52	118	53	18	36	313
Colaba	3,50,453	24	2	...	...	...	22	57	9	...	2	...	...	116
Surat	4,92,684	3	1	...	...	...	4	30	99	264	46	7	...	454
Ahmedabad	8,29,637	...	...	4	...	4	2	...	1	3	...	...	...	14
Broach	3,17,906	...	...	...	...	...	...	...	...	..	...	...	...	...
Punch Mehals ...	2,47,577	...	...	...	2	...	14	14	...	...	...	...	..	30
Kaira	7,82,733	...	...	1	1	5	10	2	...	...	...	...	...	19
Khandesh	9,72,255	...	...	...	...	4	77	259	1,137	94	6	...	...	1,577
Ahmednugger ...	7,74,060	...	...	...	7	87	332	354	436	508	104	9	...	1,837
Nassick	6,72,791	14	44	21	30	168	270	413	598	251	76	8	...	1,893
Sholapore	5,71,822	2	6	57	124	325	517	268	110	23	31	...	...	1,463
Sattara	10,40,193	6	15	2	28	44	165	559	363	308	150	...	...	1,640
Kuladghee	7,58,514	5	12	12	11	136	311	511	482	187	40	29	14	1,750
Belgaum	9,38,750	...	...	...	...	8	97	193	97	111	50	56	5	617
Dharwar	8,83,611	...	...	...	...	...	...	...	...	...	...	24	...	24
Canara	3,74,780	...	...	...	...	...	...	...	...	...	...	...	...	...
Rutnagherry	9,82,281	...	...	12	6	...	...	...	...	55	18	...	...	91
Thur and Parkur ...	2,25,000	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona	8,49,437	...	...	...	21	311	1,290	1,199	553	190	24	20	5	3,613
Kolhapore	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Karachi	3,40,000	...	...	...	...	...	...	...	...	...	...	...	...	...
Haidarabad	5,68,073	...	...	...	...	...	...	...	...	...	...	...	...	...
Upper Sind	99,220	...	...	...	...	...	...	...	...	...	...	...	...	...
											Total		...	15,642

Statistics—general population.

H.

Statement showing the deaths from Cholera registered in the different districts of the MADRAS PRESIDENCY *during each month of* 1872.

DISTRICTS.	Estimated population.	CHOLERA DEATHS REGISTERED IN EACH MONTH.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Ganjam	984,385	5	...	44	576	1,179	931	302	141	28	17	57	...	3,280
Vizagapatam ...	1,254,930	...	...	...	16	311	1,304	2,081	1,052	346	125	25	3	5,263
Godavery	1,427,464	...	...	...	...	...	25	239	961	125	12	...	...	1,362
Kristna	1,237,989	45	...	...	...	...	...	...	50	59	35	...	...	189
Nellore	1,122,822	...	...	..	...	...	...	1	16	2	...	5	56	80
Madras	450,000	...	3	2	...	...	...	...	...	...	...	...	...	5
Chingleput	784,088	5	...	...	1	33	3	...	...	...	..	...	...	42
South Arcot	1,261,846	313	241	37	39	32	18	16	8	16	11	17	10	758
Trichinopolly ...	1,006,826	12	20	5	18	13	6	10	12	6	7	13	6	128
Tanjore	1,717,268	15	18	29	10	22	19	5	...	2	...	...	...	120
Madura	1,147,955	12	...	12	4	...	1	...	...	...	10	7	5	51
Tinnevelly	1,524,019	5	3	2	...	3	4	1	...	5	...	...	...	23
Kurnool	770,857	...	...	...	...	...	...	...	...	3	53	73	...	129
Cuddapah	1,144,759	...	...	...	...	...	...	...	...	...	...	...	...	...
Bellary	1,231,985	...	...	...	...	...	...	...	...	...	...	...	...	...
North Arcot ...	1,751,072	510	278	174	4	7	2	4	...	...	...	...	...	979
Salem	1,619,233	204	86	100	150	26	4	...	...	...	1	...	...	571
Coimbatore	1,393,582	3	1	16	...	...	...	...	...	...	...	...	...	20
Neilgherries ...	38,142	...	1	...	...	...	...	...	...	...	...	...	...	1
South Canara ...	836,019	22	37	33	21	11	16	19	10	...	...	...	...	169
Malabar	1,849,805	3	4	8	4	13	7	4	1	...	...	...	1	45
												TOTAL	...	*13,215

---

* These figures are taken from the monthly statements and present a slight discrepancy with the Sanitary Commissioner's Annual Abstract which shows a total of 13,247.

I.

Statement of deaths from Cholera recorded in the different districts of BRITISH BURMAH *during each month of* 1872.

DISTRICTS.	Population.	NUMBER OF DEATHS FROM CHOLERA REGISTERED IN EACH MONTH.												Total deaths of the year.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Akyab	266,858	8	2	109	118	89	74	105	18	1	...	...	...	524
Ramree	144,251	...	...	...	8	...	...	...	3	..	...	...	...	11
Sandoway	54,655	...	...	...	...	...	...	4	11	3	7	...	...	25
Rangoon	431,069	7	2	3	3	...	1	13	...	9	...	1	...	39
Bassein	316,982	...	...	4	...	3	...	...	...	...	...	1	...	8
Myanoung	444,750	...	...	2	2	11	...	...	...	...	...	...	...	15
Prome	274,872	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo	144,131	...	2	...	9	...	...	...	2	...	...	...	...	13
Amherst	236,437	1	...	3	1	...	...	...	...	...	...	...	...	5
Tavoy	72,456	...	...	...	...	...	...	...	...	...	...	...	...	...
Mergui	46,184	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungthoo	87,836	...	...	...	...	...	...	...	..	...	...	...	...	...
Shwegyeen	142,629	...	...	...	...	...	...	...	...	...	...	...	...	...
											TOTAL		...	640

EUROPEAN TROOPS, 1872.

TABLE showing the Distribution by Stations of the Cholera of the men, women, and children of the European Regiments composing the Army of India.

Stations.	Aggregate of the average strength of the month of August.	Number of Admissions into Hospital in each month. January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total admissions of the year.	Admission-rate per 1,000 of strength.	Number of deaths.	Deaths per 1,000 of strength.
Deolalie Depôt, Bengal Troops ...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts, Bengal Troops ...	3	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Troops on March, Bengal and North-Western Provinces ...	.....		...	1	...	...	..	...	...	...	...	...	...	1	...	1	...
Recruits, invalids, &c., &c....	......	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
Fort William ...	1,092	...	...	...	...	...	...	1	...	1	...	...	...	2	1·8	1	·9
Dum-Dum ...	798	...	..	...	...	...	...	...	...	...	...	1	...	1	1·3	1	1·3
Barrackpore ...	615	...	...	...	...	...	..	..	...	...	...	1	...	1	1·6	1	1·6
Total ...	2,505	.	...	...	.	...	...	1	...	1	..	2	...	4	1·6	3	1·2
Hazareebaugh ...	1,126	...	...	...	...	...	...	...	...	...	...	...	..	..	...	...	...
Dinapore ...	1,114	..	...	...	...	...	..	1	...	...	...	...	1	2	1·8	2	1·8
Benares ...	655	...	...	...	3	...	...	1	...	...	...	..	...	4	6·1	3	4·6
Chunar ...	71	...	.	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Fyzabad ...	1,193	..	...	...	...		...	...	13	49	...	...	...	62	52·0	39	32·7
Lucknow ...	3,187	...	...	...	...	4	...	12	21	16	2	2	...	57	17·9	37	11·6
Seetapore ...	792	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur ...	273	...	...	...	...	...	...	...	3	2	...	...	...	5	18·3	4	14·7
Cawnpore ...	1,107	...	...	..	..	22	8	...	...	...	..	...	...	30	27·1	20	18·1
Allahabad ...	1,378	...	...	1	3	5	...	...	49	1	...	..	...	59	42·8	38	27·6
Total ...	10,895	...	...	1	6	31	8	14	86	68	2	2	1	219	20·1	143	13·1
Shahjehanpore ...	476	...	...	...	...	...	...	...	5	1	...	...	...	6	12·6	4	8·4
Bareilly ...	937	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad ...	258	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee ...	521	...	...	...	...	...	...	...	...	7	...	...	...	7	13·4	3	5·8
Meerut ...	1,053	...	...	...	...	...	...	...	18	65	...	...	...	83	42·5	63	32·3
Delhi ...	743	...	...	...	..	...	...	...	...	...	..	...	...	...	...	...	...
Muttra ...	591	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	5,479	...	..	.	...	...	...	...	23	73	...	...	...	96	17·5	70	12·8
Agra ...	1,399		...	...	...	10	15	5	3	3	...	...	...	36	25·7	23	16·4
Morar ...	1,386	...	...	...	...	...	1	...	...		...	..	...	1	·7	...	...
Gwalior Citadel ...	421	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Jhansi ...	500	...	...	...	...	...	..	...	...	...	...	..	...	...	...	...	...
Nowgong ...	372	...	...	...	...	...	...	...	2	1	...	...	...	3	8·1	3	8·1
Saugor ...	499	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Jubbulpore ...	724	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	5,301	...	...	...	...	10	16	5	5	4		...	...	40	7·5	26	4·9
Umballa ...	1,599	..	...	...	..	...	...	...	1	3	...	...	...	4	2·5	1	·6
Phillour ...	70	...	...	...	...	...	...	...	5	6	...	...	...	11	157·1	11	157·1
Jullundur ...	1,028	...	...	..	...	...	...	...	6	6	2	...	...	14	13·6	12	11·7
Ferozepore ...	1,477	...	...	..	...	...	...	...	..	...	...	...	...	...	...	...	...
Mooltan ...	1,094	..	..	...	..	..	...	..	3	...	...	...	..	3	2·8	2	1·8
Dera Ishmail Khan ...	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Sealkote ...	1,516	...	..	...	1	3	...	...	...	...	...	...	...	4	2·6	4	2·6
Umritsur ...	352	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Fort Lahore ...	77	...	...	...	...	...	...	6	1	...	...	...	...	7	90·9	7	90·9
Meean Meer ...	1,358	...	...	...	...	...	...	1	179	5	...	...	...	185	136·2	123	90·6
Rawul Pindee ...	1,775	...	...		..	...	...	1	...	3	...	...	...	4	2·3	4	2·3
Campbellpore ...	182	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	...
Attock ...	204	...	...	...	...	...	...	...	...	...	3	...	...	3	14·7	3	14·7
Nowshera ...	741	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ...	1,703	...	...	...	...	...	...	...	...	...	80	2	...	82	48·1	62	36·4
Cherat ...	943	...	...	..	...	...	...	...	..	...	1	...	...	1	1·1	...	...
Troops on march, Punjab ...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Recruits, invalids, &c., &c....	...	...	...	...	...	...	...	...	...	...	...	.	...	...	...	...	...
Total ...	14,218	...	...	...	1	3	...	8	195	23	86	2	...	318	22·4	229	16·1
Darjeeling ...	87	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ranee Khet ...	608	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata ...	1,136	...	...	...	...	...	...	...	3	2	...	...	...	5	4·4	2	1·8
Dugshaie ...	1,307	...	...	...	...	...	...	..	36	1	3	...	...	40	30·6	28	21·4
Subathoo ...	1,134	...	...	...	...	.	...	6	...	...	...	...	...	6	5·3	3	2·7
Jutogh ...	125	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra ...	30	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurumsalla ...	30	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills ...	703	...	..	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	5,210	...	..	...	...	...	..	6	39	3	3	...	..	51	9·8	33	6·3
Darjeeling Depôt ...	159	...	...	...	...	...	...		...	...	...	...	...	...	...	...	...
Nynee Tal " ...	372	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour " ...	283	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Kussowlie " ...	991	...	...	...	...	...	...	25	22	1	...	...	...	48	48·4	26	26·2
Dalhousie " ...	510	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree " ...	865	...	..	...	...	...	...	...	12	28	...	...	...	40	46·2	28	32·4
	3,180	...	...	...	.	...	...	25	34	29	...	...	...	88	27·7	54	17·0
Bengal Presidency ...	46,799	...	...	2	7	44	24	59	382	201	91	6	1	817	17·5	559	11·9

J—*(continued.)*

STATIONS.	Aggregate of the average strength of the month of August.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admissions of the year.	Admission-rate per 1,000 of strength.	Number of deaths.	Death-rate per 1,000 of strength.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.				
Troops on march, Bombay Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalie Depôt, Bombay Troops ...	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona Depôt, Bombay Troops ...	67	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt, Bombay Troops ...	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Madras Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts ...	300	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalie Depôt, Madras Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depots, Madras Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	952	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neemuch ...	549	...	...	...	...	...	2	6	9	14	...	...	...	31	56·5	23	41·9
Indore ...	111	...	...	...	...	2	...	...	1	...	...	...	...	3	27·0	3	27·0
Mhow ...	2,078	...	...	...	6	13	...	...	...	...	...	...	...	19	9·1	16	7·7
Deesa ...	1,850	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda ...	237	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree ...	1,122	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad ...	494	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden ...	899	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	7,792	...	...	...	6	15	2	6	10	14	...	...	...	58	6·8	42	5·4
Bombay ...	597	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur ...	141	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	854	...	...	...	...	...	1	...	...	...	...	...	...	1	1·2	1	1·2
Poona and Kirkee ...	3,271	...	...	...	...	...	...	9	2	...	...	...	...	11	3·4	10	3·1
Sattara ..	245	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum ...	1,384	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad ...	3,538	...	...	1	1	...	...	...	...	...	...	2	...	4	1·1	1	·3
Kamptee ...	1,443	...	...	...	...	...	1	...	...	...	...	...	...	1	·7	1	·7
Total ..	11,473	...	...	1	1	...	2	9	2	...	...	2	...	17	1·5	13	1·1
Bellary ...	1,157	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore ...	2,563	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cannanore ...	938	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malliapoorum ...	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut ...	117	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly ...	425	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount ...	616	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras ...	919	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	6,865	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rangoon ...	1,168	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungoo ...	676	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thyetmyo ...	805	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ..	113	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	2,762	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Taraghur, Ajmere ...	43	...	...	...	...	...	...	...	...	...	1	...	...	1	23·3	1	23·3
Mount Aboo ...	167	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ...	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree, Madras Troops	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramondroog ...	76	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	601	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	1,081	...	...	...	...	...	...	...	...	...	1	...	...	1	·9	1	·9
ARMY OF BENGAL ...	46,799	...	...	2	7	44	24	59	382	201	91	6	1	817	17·5	559	11·9
ARMY OF MADRAS ...	15,734	...	...	1	1	...	1	...	...	...	...	2	...	5	·3	2	·1
ARMY OF BOMBAY ..	14,702		...	...	6	15	3	15	12	14	1	...	...	66	4·5	54	3·7
ARMY OF INDIA ...	77,235	...	...	3	14	59	28	74	394	215	92	8	1	888	11·5	615	7·9

Statistics— Native Troops.

K.

NATIVE TROOPS, 1872.

Table showing the Distribution of the Cholera of the Native Regiments composing the Army of Bengal.

STATIONS.	Average strength of the month of August.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total admissions of the year.	Admission rate per 1,000 of strength.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
Troops on march, Bengal and N. W. P.	...	...	...	...	2	4	2	...	...	...	...	...	1	9	...
Looshaie Field Force	†	2	4	97	2	...	...	...	...	...	...	...	...	105*	30·9
Fort William	610	...	...	...	3	...	...	...	...	...	...	...	...	3	4·9
Alipore	920	...	...	...	...	...	1	...	...	...	...	...	...	1	1·1
Dum-Dum	116	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore	786	...	...	...	...	...	...	2	...	...	2	1	...	5	6·4
Berhampore	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dacca	282	...	...	...	...	...	...	...	...	...	...	...	2	2	7·1
Cachar and out-posts	450	...	...	6	2	...	...	...	...	...	...	...	...	8	17·8
Sylhet	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shillong	587	1	...	1	...	...	...	1	...	...	...	...	...	3	5·1
Gowhatty	503	...	...	...	...	6	...	...	...	...	...	...	...	6	11·9
Tezpore	158	...	...	...	...	...	2	1	...	...	...	...	...	3	19·0
Nowgong	85	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Debrooghur	717	...	...	...	...	1	1	...	...	...	2	...	...	4	5·6
Buxa	574	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Julpigoree	319	...	...	...	...	1	...	...	2	...	...	...	...	3	9·4
Bhaugulpore	508	...	...	...	...	...	...	...	1	...	...	...	...	1	2·0
Dinapore	603	...	...	...	...	1	...	...	...	1	...	...	...	2	3·3
Segowlie	274	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares	550	...	...	...	...	...	...	...	...	...	...	...	1	1	1·8
Chunar	70	...	...	...	...	...	1	...	1	...	...	...	...	2	28·6
Goruckpore	599	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	606	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow	969	...	...	...	1	2	...	2	2	1	...	...	...	8	8·3
Seetapore	235	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur	176	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	808	...	...	...	...	...	1	...	...	...	...	...	...	1	1·2
Allahabad	904	...	...	...	...	4	...	...	3	...	...	...	...	7	7·7
Nagode	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahjehanpore	242	...	...	...	...	...	...	5	...	...	...	...	...	5	20·7
Barielly	933	...	...	...	...	...	...	1	...	...	...	...	...	1	1·1
Moradabad	390	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Almorah	570	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deyrah	415	...	...	...	...	...	...	1	8	...	...	1	...	10	24·1
Roorkey	732	...	...	...	...	...	...	...	...	4	...	...	...	4	5·5
Meerut	857	...	...	...	...	...	...	...	1	1	...	...	...	2	2·3
Delhi	598	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra	1,037	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar	1,494	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansie	618	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	228	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lullutpore	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolee	156	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulwur and Sambhur	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umballa	903	...	...	...	...	...	...	...	...	1	...	...	...	1	1·1
Simla	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Loodianah and Phillour	93	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	593	...	...	...	...	...	...	...	1	...	...	...	...	1	1·7
Ferozepore	556	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	921	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	969	...	...	...	...	...	...	...	...	...	...	...	...	‡	...
Dhurmsalla	600	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bukloh	537	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	260	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	1,267	...	...	...	...	...	...	...	19	6	...	...	...	25§	19·8
Jhelum	1,538	...	...	...	1	...	...	2	3	...	...	...	...	6	3·9
Rawul Pindee	1,658	...	...	...	...	...	...	...	1	...	...	...	...	1	·6
Tullagunge	415	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	156	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazara	457	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera and out-posts	752	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur and out-posts	3,498	...	...	...	...	...	...	...	...	...	44	1	...	45	12·9
Troops on march, Punjab ...	...	...	...	...	1¶	...	...	...	...	...	...	...	...	1	...
Total ...	36,658	3	4	104	12	19	8	15	42	14	48	3	4	276	7.6
Murdan	680	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abbottabad	1,317	...	...	...	...	...	1	...	...	...	...	...	...	1	·8
Kohat	2,222	...	...	...	...	...	...	...	44	46	1	...	...	91	41·0
Bunnoo	1,621	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ghazee Khan	1,381	...	...	...	...	...	...	...	...	1	...	...	...	1	·7
Dera Ismael Khan	1,571	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajanpore	548	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total —	9,340	...	...	...	...	...	1	...	44	47	1	...	...	93	10·0
Augur	290	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goonah	329	...	...	...	...	1	...	...	...	...	...	...	...	1	3·0
Sirdarpore	452	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kherwarra	438	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erinpoora	795	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmere	633	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolee	725	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sehore	814	...	...	...	...	...	...	7	...	...	...	...	...	7	8·6
Total ...	4,476	...	...	...	...	1	...	7	...	...	...	...	...	8	1·8
GRAND TOTAL ...	50,474	3	4	104	12	20	9	22	86	61	49	3	4	377	7·5

---

* Fifty-three cases admitted into the General Hospitals of the Looshaie Field Force in March appear also in the Regimental Returns. The number of admissions here given corresponds very nearly with the number shown in the annual returns of the Regiments employed. The current record is frequently deficient when regiments are broken up into small bodies, and their sick distributed in General Hospitals.

† The strength represented in the returns is approximately 3,400.

‡ A child of the Regiment died on 23rd May, and a doolie bearer on 11th October.

§ One fatal case occurred at Fort Lahore.

¶ Man of Peshawur Mountain Battery returning from Looshaie Expedition, seized at Lahore.

Statistics—
Native Troops.

K—(*continued*).

STATIONS.	Average strength of the month of August.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Deaths.	Death-rate per 1,000 of strength.
Troops on the march, Bengal and North-Western Provinces ...	......	...	...	...	2	...	2	...	...	...	...	...	1	5	...
Looshaie Field Force, with General Hospitals	......	3	1	80	2	...	...	...	...	...	...	...	...	86	25·3
Fort William	610	...	...	...	2	...	...	...	...	...	...	...	...	2	3·3
Alipore	920	...	...	...	...	...	1	...	...	...	...	...	...	1	1·1
Dum-Dum	116	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore	786	...	...	...	...	...	...	...	...	...	...	1	...	1	1·3
Berhampore	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dacca	282	...	...	...	...	...	...	...	...	...	...	...	1	1	3·5
Cachar and out-posts	450	...	...	4	1	...	...	...	...	...	...	...	...	5	11·1
Sylhet	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shillong	587	1	...	1	...	...	...	...	...	...	...	...	...	2	3·4
Gowhatty	503	...	...	...	...	3	...	...	...	...	...	...	...	3	6·0
Tezpore	158	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	85	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Debrooghur	717	...	...	...	...	1	1	...	...	...	...	...	...	2	2·8
Buxa	574	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Julpigoree	319	...	...	...	...	1	...	...	...	...	...	...	...	1	3·1
Bhaugulpore	508	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore	603	...	...	...	...	1	...	...	...	1	...	...	...	2	3·3
Segowlie	274	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares	550	...	...	...	...	...	...	...	...	...	...	...	1	1	1·8
Chunar	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goruckpore	599	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	606	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow	969	...	...	...	...	1	...	2	2	1	...	...	...	6	6·2
Seetapore	235	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur	176	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	808	...	...	...	...	...	1	...	...	...	...	...	...	1	1·2
Allahabad	904	...	...	...	...	3	...	...	1	...	...	...	...	4	4·4
Nagode	90	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahjehanpore	242	...	...	...	...	...	...	...	3	...	...	...	...	3	12·4
Bareilly	933	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	390	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Almorah	570	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deyrah	415	...	...	...	...	...	...	1	8	...	...	1	...	10	24·1
Roorkee	732	...	...	...	...	...	...	...	...	2	...	...	...	2	2·7
Meerut	857	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Delhi	598	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra	1,037	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar	1,494	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansie	618	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	228	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lullutpore	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolee	156	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulwur and Sambhur	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umballa	903	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Simla	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Loodianah and Phillour ...	93	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	593	...	...	...	...	...	...	...	1	...	...	...	...	1	1·7
Ferozepore	556	...	...	...	...	...	...		...	...	...	...	...	...	...
Mooltan	921	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	969	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla	600	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bukloh	537	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	260	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	1,267	...	...	...	...	...	...	...	10	2	...	...	...	12	9·5
Jhelum	1,538	...	...	...	...	...	...	1	1	...	...	...	...	2	1·3
Rawul Pindee	1,658	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tullagunge	415	...	...	...	...	...	...	...	...	...	...	...		...	...
Attock	156	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazara	457	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera and out-posts ...	752	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur and out-posts	3,498	...	...	...	...	...	...	...	...	...	28	1	...	29*	8·3
Troops on march, Punjab ...	......	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	36,658	4	1	85	7	10	5	4	26	6	28	3	3	182	5·0
Murdan	680	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abbottabad	1,317	...	...	...	...	...	1	...	...	...	...	...	...	1	·7
Kohat	2,222	...	...	...	...	...	...	...	27	32	...	...	...	59	26·5
Bunnoo	1,621	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ghazee Khan	1,381	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ishmael Khan	1,571	...	...	...	...	...	...	...	...	1	...	...	...	1	·6
Rajanpore	548	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	9,430	...	...	...	...	...	1	...	27	33	...	...	...	61	6·5
Augur	290	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goonah	329	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sirdarpore	452	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Khurwarra	438	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erinpoora	795	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmere	633	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolee	725	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sehore	814	...	...	...	...	...	...	3	1	...	...	...	...	4	4·9
Total ..	4,476	...	...	..	.	...	...	3	1	...	...	...	...	4	...
GRAND TOTAL ...	50,474	4	1	85	7	10	6	7	54	39	28	3	3	247	4·9

Statistics— Jails.

L.

JAILS, 1872.

TABLE showing the Distribution of the Cholera of the Jails of the Bengal Presidency.

STATIONS.	Average strength of August.	Number of Admissions from Cholera in each Month.												Total of the year.	Number of Deaths.	Rates per 1000.	
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.			Admissions.	Deaths.
Presidency Natives ...	1,015	...	...	...	...	...	1	13	...	1	4	...	...	19	12		
Alipore	2,480	1	3	2	1	1	4	2	2	...	1	...	...	17	4		
Baraset	303	...	...	...	...	1	...	...	...	...	...	...	...	1	...		
Jessore	630	...	...	...	...	...	...	...	...	...	...	1	...	1	1		
Kishnaghur	326	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Moorshedabad	214	...	...	...	1	...	...	...	...	...	...	...	1	2	2		
Howrah	37	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Serampore	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Hooghly	405	1	...	...	...	...	1	...	...	...	...	...	...	2	2		
Burdwan	193	...	...	...	...	...	...	...	2	...	...	...	...	2	...		
Bancoorah	238	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Purulea	193	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Raneegunge	15	...	...	...	...	...	...	...	...	1	...	...	...	1	...		
Sooree	288	...	...	...	...	...	...	2	...	...	...	...	...	2	...		
Rajmehal and Pakour ...	169	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Deogur and Sub-Divisions.	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Maldah	68	...	1	1	1	...	...	...	...	...	...	...	...	3	1		
Dinagepore	416	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Rajshahye	650	...	...	3	1	1	...	...	...	...	...	...	...	5	2		
Rungpore	264	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Bograh	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Mymensingh	392	...	...	2	...	...	...	...	...	...	...	...	...	2	...		
Pubnah	131	...	...	...	3	1	...	...	...	...	...	...	...	4	3		
Furreedpore	371	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Backergunge	578	...	...	...	6	...	...	...	...	1	...	1	15	23	10		
Noacolly	164	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Chittagong	244	1	...	...	...	...	...	...	...	...	...	...	...	1	...		
Tipperah	225	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Dacca	600	...	...	1	...	1	1	1	...	1	...	...	4	9	3		
Sylhet	430	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Shillong	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Cachar	102	...	...	2	1	...	...	...	...	...	...	...	...	3	3		
Naga Hills	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Gowalparah	104	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Gowhatty	69	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Seebsaugor	106	...	...	...	...	...	...	...	...	...	...	4	...	4	2		
Nowgong	83	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Tezpore	182	...	...	...	...	4	2	...	...	...	...	...	...	6	1		
Debroogurh	65	...	...	...	...	...	...	1	...	...	...	...	...	1	1		
Midnapore	1,188	...	...	2	...	...	...	...	...	...	...	...	...	2	...		
Balasore	150	...	...	1	...	...	...	...	...	...	...	...	...	1	1		
Cuttack	255	...	...	...	1	...	1	...	...	...	...	...	...	2	2		
Pooree	88	...	...	...	...	...	...	2	...	...	...	...	...	2	1		
Monghyr	335	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Bhaugulpore, Central ...	800	...	...	...	2	8	...	4	2	...	...	...	...	16	...		
Bhaugulpore District ...	330	...	...	4	1	...	3	1	...	...	...	...	...	9	1		
Purneah	342	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Julpigoree	47	...	...	...	...	24	1	...	...	...	...	...	...	25	19		
Darjeeling	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	15,604	3	4	18	18	41	14	26	6	4	5	6	20	165	71	10·6	4·5
Chyebassa	102	...	...	...	1	...	...	...	...	...	...	...	...	1	...		
Ranchee	203	1	...	...	...	...	...	...	1	...	...	...	...	2	...		
Hazareebaugh, Central ...	729	...	...	...	...	...	1	3	...	...	...	...	...	4	1		
Hazareebaugh District ...	133	...	...	...	...	...	...	1	...	...	...	...	...	1	...		
Gyah	422	...	...	1	...	1	1	...	2	2	...	...	...	7	1		
Patnah	496	...	...	1	...	...	...	...	1	...	...	...	...	2	...		
Dehree convict ...	774	...	...	...	...	...	...	25	21	...	...	...	...	46	13		
Arrah	419	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Chumparum	287	...	...	...	...	...	...	...	...	2	...	1	...	3	2		
Mozufferpore	408	...	...	...	...	...	...	1	73	...	...	...	...	71	39		
Chuprah	354	...	...	...	...	...	...	...	11	3	...	...	...	14	8		
Ghazeepore	552	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Benares, Central ...	1,322	...	...	...	...	...	...	6	...	...	...	...	...	6	5		
Benares District ...	511	...	...	...	...	...	...	...	3	...	...	...	...	3	1		
Mirzapore	291	...	...	...	...	...	...	4	3	...	...	...	...	7	4		
Azimgurh	464	...	...	...	...	...	...	...	8	...	1	...	...	9	7		
Jounpore	357	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Gorruckpore	861	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Bustee	414	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Gondah	617	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Barraitch	342	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Fyzabad	1,089	...	...	...	...	...	...	...	...	...	62	5	...	67	19		
Sultanpore	621	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Roy Barreilly	534	...	...	...	...	...	2	...	...	...	...	...	...	2	1		
Pertabgurh	357	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Hurdui	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Kheree	182	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Lucknow, Central ...	1,684	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Lucknow District ...	1,100	...	...	...	...	...	...	...	3	...	...	...	...	3	...		
Seetapore	840	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Nawabgunge	222	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Oonao	264	...	...	...	...	...	...	...	4	...	...	...	...	4	2		
Humeerpore	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Oraie	182	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Futtehgurh, Central ...	935	...	...	...	...	...	...	...	1	1	...	...	...	2	2		
Futtehgurh District ...	351	...	...	...	...	...	...	...	3	...	...	...	...	3	3		
Cawnpore	337	...	...	...	...	1	...	...	...	...	...	...	...	1	1		
Futtehpore	352	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Bandah	349	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Allahabad, Central ...	1,678	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Allahabad District ...	689	...	...	...	3	...	...	...	2	2	...	...	...	7	5		
	22,306	1	...	2	4	2	4	40	136	10	63	6	...	268	114	12·0	5·1

Statistics—Jails.

L—(*continued.*)

Stations.	Average strength of August.	Number of Admissions from Cholera in each month.												Total of the year.	Number of deaths.	Rates per 1000.	
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.			Admissions.	Deaths.
Sumbulpore	95	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Raepore	247	...	...	...	...	...	...	...	...	...	...	...	...		...		
Belaspore	77	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Mundla	42	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Soonee	116	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Chindwarrah	47	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Baitool	73	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Nursingpore	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Hosungabad	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Nimar	101	...	...	2	...	...	1	...	2	...	...	...	...	5	4		
Sehore	69	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Nagpore	682	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Bandhara	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Wurdah	47	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Chandah	103	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Sironcha	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	2,021	...	...	2	...	...	1	...	2	...	...	...	...	5	4	2·5	2·0
Jubbulpore	742	...	...	...	...	...	...	1	...	...	...	...	...	1	...		
Dumoh	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Saugor	134	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Lullutpore	117	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Jhansie	269	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Ajmere	323	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Muttra	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Agra, Central	1,352	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Agra District	293	...	...	...	...	...	...	...	...	1	...	...	...	1	...		
	3,483	...	...	...	...	...	...	1	...	1	...	...	...	2	...	·6	...
Etah	250	...	...	...	...	...	...	...	...	...	...	...	...	None.	...		
Etawah	238	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Mynpoorie	452	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Allygurh	458	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Boolundshuhur ..	141	...	...	...	...	...	...	...	5	...	...	...	...	5	3		
Shahjehanpore	254	...	...	...	...	...	...	1	...	...	...	...	...	1	1		
Bareilly, Central ...	994	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Bareilly District ..	611	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Budaon	298	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Saharunpore	350	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Bijnour	244	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Deyrah	50	...	...	...	...	...	...	2	1	2	...	...	...	5	4		
Almorah	187	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Moozuffernuggur ...	142	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Mooradabad	305	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Meerut, Central ...	838	...	...	...	...	...	...	...	...	18	...	...	...	18	10		
Meerut District ...	424	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	6,296	...	...	...	...	...	...	3	6	20	...	...	...	29	18	4·6	2·9
Delhi	301	...	...	...	...	...	...	...	...	...	...	...	...	None.	...		
Goorgaon	173	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Rohtuck	232	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Hissar	265	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Sirsa	266	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Kurnaul	237	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Umballa	675	...	...	...	...	...	...	10	5	...	...	...	...	15	6		
„ Roopar ..	497	...	...	...	...	...	...	...	11	4	...	...	...	15	6		
Loodianah	328	...	...	...	...	...	...	...	7	...	...	...	...	7	...		
Jullundur	373	...	...	...	...	...	...	...	2	...	...	...	...	2	2		
Ferozepore	403	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Umritsur	685	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Lahore, Central ...	2,271	...	...	...	...	...	...	...	47	...	...	...	...	47	22		
Lahore, Female ...	153	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Sealkote	509	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Dhurmsalla	152	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Goordaspore	349	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Goojranwalla	546	...	...	...	...	...	...	...	1	...	...	...	...	1	1		
Goojrat	275	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Shahpore	248	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Jhelum	296	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Montgomery	665		...	...	...	...	...	...	...	...	...	...	...	...	...		
Mooltan	813	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Jhung	368	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Dera Ghaze Khan ...	405	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Dera Ismail Khan ...	386	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Kohat	199	...	...	...	...	...	...	...	...	3	...	...	...	3	3		
Bunnoo	111	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Rawulpindee	1,085	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Peshawur	705	...	...	...	...	...	...	...	...	...	1	...	...	1	1		
	13,071	...	...	...	...	...	...	10	73	7	1	...	...	91	41	6·5	2·9
Bengal Presidency ..	63,681	4	4	22	22	43	19	80	223	41	69	12	20	560	248	8·8	3·9

SECTION II.—EUROPEAN TROOPS.

Total mortality of the year in the Army of India and in the three Presidencies;

125. The history of the cholera epidemic—the main feature of 1872—has occupied so much space that I must touch but briefly on the other sanitary matters of the year. The total deaths among the men of the European Army of India from all causes, 1,425 out of a strength of 58,870, equalled 24·21 per 1,000. Divided according to Presidencies the ratio for Bengal was 27·45—1,002 out of a strength of 36,507; for Madras, 18·98—219 out of a strength of 11,544; and for Bombay 18·86—204 out of a strength of 10,819. A reference to the statement given at page 3 of last Annual Report will show that in Bengal, the death-rate in 1872 was higher than in either 1870 or 1871, but considerably lower than in 1869, when, chiefly owing to another cholera epidemic, it rose to 42·89. In the Madras Presidency the ratio 18·98 is more favorable than in any one of the previous four years in which it varied from 19·2 to 23·3. In Bombay, on the other hand, the results are less favorable than in either 1870 or 1871, but more so than those of 1869.

Omitting the proportion due to cholera.

126. If the mortality from other causes be separated from that due to cholera, the death-rate in Bengal compares very favorably with the experience of former years. For the purpose of comparison with the figures in the statement already referred to, it is convenient to divide the deaths into those which occurred in hospital and those which occurred out of hospital. Under the former head, omitting cholera, they equalled 15·81 per 1,000, a smaller proportion than in any of the preceding 14 years in which it has fluctuated between a maximum of 91·39 and a minimum of 16·07. In 1858 when the army was in the field the deaths out of hospital amounted to 10·52 per 1,000. During the succeeding 13 years they have varied from ·59 to 1·53. In 1872 they were ·98. In the Madras Presidency the deaths in hospital from all causes except cholera equalled 17·85 in 1872 and those out of hospital ·96. In Bombay the ratios under these heads were 14·61 and ·92. Adopting the same form of statement as that given for series of years in last Annual Report, the mortality in each of the three presidencies from cholera and all other causes taken as a whole stands thus:—

YEAR.	BENGAL.				MADRAS.				BOMBAY.			
	DIED PER 1,000 OF AVERAGE STRENGTH.											
		All other causes.				All other causes.				All other causes.		
	Cholera.	In Hospital.	Out of Hospital.	Total.	Cholera.	In Hospital.	Out of Hospital.	Total.	Cholera.	In Hospital.	Out of Hospital.	Total.
1872 ...	10·66	15·81	·98	27·45	·17	17·85	·96	18·98	3·33	14·61	·92	18·86

Extent of sickness.

127. The extent of sickness may be tested either by the number of cases admitted into hospital or the average proportion daily under treatment. The admission-rate was highest in Bombay, 1,588 per 1,000, the equivalent of 17,186 cases. In Bengal 55,274 give a ratio of 1,514, and in Madras 15,670 give 1,357. But the daily ratio of men in hospital followed the very reverse order. It was highest in Madras, 59; next highest in Bengal, 56; and lowest in Bombay, 50 per 1,000. Compared with the statistics of the years since 1858 as summarized in last

report, these results do not call for any special remark. The admission-rate in this presidency is very much the same as in 1871, and although somewhat higher than in three of the previous years, it is much more favorable than the average of the last ten. The daily sick-rate for Bengal, with the exception of 1867 and 1868, is slightly lower than it has ever been before. Taking a similar standard of comparison, the returns for Madras and Bombay are also favorable. In the army of India as a whole there were 88,130 cases of sickness, or 1,497 per 1,000 of strength; 3,306 men on an average were always in hospital, or 56 out of every 1,000. In 1871, the only year with which comparison can be fully made, as the three presidencies were then for the first time included in the statistics of the Annual Sanitary Report, the ratios were of admissions into hospital 1,449, and of daily sick 57, figures which vary wonderfully little from those of 1872.

Comparison of sickness in the three Presidencies by months.

128. Before taking up the sanitary history during the past year of the European Army of Bengal with which this report is more immediately concerned, the general facts regarding the sickness and mortality of the three presidencies deserve attention. These facts are very clearly shown in Table V under four sections. In the first is displayed the daily average sick-rate of each month. In Bengal the minimum, 47 per 1,000, was in March, and the maximum 70 in September, but the ratio for October, 69, was very nearly as high. In Madras September presents exactly the same proportion of daily sick as in Bengal, but the minimum never falls below 52. In Bombay the highest ratio, 60, is reached in October and November. Like Bengal the lowest is in March, 43, and this is the monthly minimum attained in any one of the three presidencies. In the army of India taken as a whole, as might be expected from these details, there was the largest number of sick in September and October, and the smallest in March.

Forms of sickness in the three Presidencies compared.

129. In all the three presidencies fevers classed under the two designations of "intermittent" and "remittent and continued" head the list as the chief forms of sickness. In both Bengal and Madras venereal diseases come next, but in Bombay the second place is taken by dengue, and venereal affections come third. Taking the 10 varieties of sickness which mainly contribute to make up the admission-rate in each presidency, the results are as follows :—

BENGAL.		MADRAS.		BOMBAY.	
		Admissions per 1,000.			
1. Malarial Fevers ...	495	Malarial Fevers ...	267	Malarial Fevers ...	611
2. Venereal Diseases ...	190	Venereal Diseases ...	164	Dengue ...	229
3. Dengue ...	110	Abscess and Ulcer ...	123	Venereal Diseases ...	154
4. Wounds and Accidents,	85	Wounds and Accidents ...	102	Abscess and Ulcer ...	92
5. Abscess and Ulcer ...	80	Dysentery ...	85	Wounds and Accidents ...	81
6. Diarrhœa ...	77	Dengue ...	82	Diarrhœa ...	63
7. Respiratory Diseases ...	75	Diarrhœa ...	76	Rheumatism ...	51
8. Rheumatism ...	64	Respiratory Diseases ...	64	Respiratory Diseases ...	48
9. Hepatitis ...	56	Hepatitis ...	59	Hepatitis ...	34
10. Dysentery ...	35	Rheumatism ...	49	Dysentery ...	34
TOTAL ...	1,267	TOTAL ...	1,071	TOTAL ...	1,397

All these ten classes of sickness make up by far the greater proportion of the whole admission-rate of the year; in Bengal 1,267 out of 1,514; in Madras 1,071 out of 1,357; and in Bombay 1,397 out of 1,588. In addition to the points already noted, the comparative frequency of dysentery in Madras deserves attention. In that presidency this disease stands fifth on the above statement, while in the other two it comes last.

Causes of death in the three Presidencies.

130. The diseases when arranged in the order in which they caused death follow a very different sequence. In each of the three presidencies the ten chief causes of mortality stand as follows:—

	Bengal.		Madras.		Bombay.	
			Deaths per 1,000.			
1.	Cholera	10·66	Hepatitis	3·29	Cholera	3·33
2.	Hepatitis ...	2·36	Dysentery	2·77	Apoplexy	2·59
3.	Fevers	1·78	Apoplexy	2·43	Enteric Fever ...	2·22
4.	Dysentery ...	1·75	Enteric Fever ...	2·34	Hepatitis	1·85
5.	Enteric Fever ...	1·62	Heart Disease ...	2·08	Phthisis Pulmonalis ...	1·66
6.	Apoplexy ...	1·59	Phthisis Pulmonalis ...	1·65	Dysentery	1·20
7.	Respiratory Diseases	1·32	Injuries	1·05	Injuries	1·01
8.	Heart Disease ...	1·12	Fevers	·69	Heart Disease ...	·92
9.	Injuries	1·09	Delirium Tremens ...	·35	Fevers	·74
10.	Phthisis Pulmonalis ...	·98	Cholera	·17	Respiratory Diseases ...	·65
		24·27		.16·82		16·17

In both Bengal and Bombay, cholera caused the highest mortality. In the former the deaths from this disease far exceeded those under any of the other heads. Hepatitis stands first in Madras, and second in Bengal, but it is fourth in Bombay. Dysentery also was more fatal in Madras than in either of the other two presidencies. Enteric fever comes third in Bombay, and fourth in Madras; in Bengal, it is fifth, but it occasioned the largest proportion of deaths in Madras. The ratios due to this disease are for Madras 2·34, for Bombay 2·22, and for Bengal 1·62. On the other hand, it is to be observed that the deaths recorded in Bengal as due to malarial fevers were 1·78, whereas in Madras they were only ·69, and in Bombay ·74. The ten diseases enumerated in each of the three presidencies (and they are the same in all, with the exception that respiratory affections do not find a place in the Madras list, but are replaced by delirium tremens) account for nearly the whole of the deaths, for 24·27 out of 27·45 in Bengal; for 16·82 out of 18·98 in Madras, and for 16·17 out of 18·86 in Bombay.

Bengal, number of men daily inefficient from sickness.

131. Turning now more particularly to the history of the European Troops in Bengal, the results in its different groups may be examined, but before doing this, the amount of inefficiency caused by the chief diseases throughout this presidency, as a whole, deserves attention. The tables do not show the number of men daily under treatment from different diseases, but an approximation to the truth on this point may be formed by taking the numbers remaining at the end of each month and dividing by twelve. The result for 1872 is thus shown, and with it may be compared the results for 1871 as given in the report for that year.

Statement showing approximately the number of European soldiers of the Bengal Bresidency, daily in Hospital from the chief diseases during 1872 *and* 1871.

	1872.	1871.		1872.	1871.
Fevers	459	460	Wounds	33	34
Venereal Diseases	420	458	Ophthalmia	28	26
Diseases of Liver	115	124	Cholera	10	1
Diseases of Chest	137	121	Smallpox	1	5
Diarrhœa	77	59	Apoplexy	2	3
Dysentery	54	56	Other Diseases	630	646

The figures for the two years in many instances present a singular similarity. Under fevers, dysentery, wounds, ophthalmia and apoplexy, they are almost identical. It is gratifying to observe that the number of men inefficient from venereal diseases was 38 per day less than it was in 1871.

Results in each group, Bengal Proper

132. Out of an average strength of 1,974 men in Bengal Proper, 3,607 were admitted into hospital, 128 on an average were daily under treatment, and 36 died. The admission, sick and death-rates in this part of the country were 1,827, 64, and 18·23 per 1,000. During the ten years from 1860 to 1869, the annual ratios averaged 1,821, 69 and 29·57. In 1870 they were 1,179, 59 and 16·54, and in 1871, 1,291, 50, and 18·72. Comparing the results of 1872 with those of previous years, sickness was more than usually prevalent, but the mortality was less than in any of the previous 12 years, except in 1867, when it was only 14·38, and in 1870, when as already stated, it was 16·54. Taking the details regarding Fort William, Dum-Dum, and Barrackpore, the three stations which compose this group, it will be seen that the sickness was in very great measure due to dengue, of which the admissions per 1,000 equalled 279 per 1,000 at Dum-Dum, 294 at Fort William, and no less than 540 at Barrackpore. In Fort William the total mortality was only 14·49, of which 2·42 was due to accidental causes.

Gangetic Provinces and Oudh.

133. In the Gangetic Provinces and Oudh which form the second group, the cases of sickness, 1,505 per 1,000, were not so numerous as in Bengal Proper, nor the average daily sick, 58 per 1,000, so high, but the mortality 25·81 was much higher. The ratios for this group of stations during the ten-year period averaged 1,614 for admissions, 69 for daily sick and 28·59 for deaths. In 1870 the numbers were 1,354, 61 and 22·97, and in 1871, 1,276, 62 and 18·34. The high rate of sickness in this group also was due in a great measure to dengue. Six out of the nine stations suffered from it, and some of them very severely. At Dinapore the admissions into hospital from this one cause equalled 524, and at Cawnpore 725 per 1,000. In consequence chiefly of dengue and also of venereal diseases which alone were in the proportion of 442 per 1,000, the admission-rate at Cawnpore was 2,412, the highest at any station in this group, and contrasts in a marked manner with the results at Seetapore, where, owing mainly to the facts that the men escaped dengue altogether and suffered from venereal to the extent of only 88 per 1,000, the total ratio of admissions into hospital was only 901. Fyzabad, although dengue prevailed to some extent, gives only 989. The mortality at the different stations of this group also presents very marked differences. At Futteghur during eight months it was only 4·65; at Hazareebaugh for the year, 6·83. At Fyzabad it was 37·27 and at both Cawnpore and Allahabad it exceeded 42. All these three places suffered from cholera. At Lucknow, where also cholera prevailed, the deaths equalled 23·91.

Meerut and Rohilcund.

134. In the Meerut and Rohilcund group, the sickness and especially the mortality were heavy. The admissions equalled 1,622, the daily sick 56 and the deaths 33·98 per 1,000. For the ten years 1860-69 the averages are, 1,576, 72 and 26·61. In 1870 the ratios were 1,284, 69 and 18·65, and in 1871, 1,659, 65 and 16·53. Of the seven stations, which make up this group, Delhi shows the greatest amount of sickness, 2,401 cases per 1,000, due in some measure to dengue which contributed 287 out of the total, but much more so to malarial fevers which alone accounted for 1,057, or nearly one half of the total admissions. At Meerut the ratio although lower was still very high, 1,972, due chiefly to malarial fevers. Contrasted with these stations, Shajehanpore with 900 and Moradabad with only 848 cases of sickness per 1,000 present very favorable results. The death-rates exhibit even greater extremes; there was a minimum of 4·88 at Moradabad and a maximum of 68·70 at Meerut. Nor are these extremes to be wholly accounted for by the presence or absence of cholera, for the only station in this group which suffered from it to any extent was Meerut. At Roorkee, the only other place at which it appeared among the men, there were only two deaths from this cause.

Agra and Central India.

135. In the Agra and Central India group the results were more satisfactory; here the admissions were in the proportion of 1,460, the daily sick 52 and the deaths 15·43 per 1,000. In not one of the ten years 1860-69 was the daily sick-rate or the mortality so low, and in only one of them, 1868, were the admissions so few.

The averages for the 10 years were for admissions 2,169, for daily sick 74 and for deaths 38·48. In 1870 the proportions were 2,122, 77 and 22·23, and in 1871, 1,928, 64 and 18·45. The history of this group in 1872 is thus exceptionally favorable. At Jhansie, however, sickness, particularly in the form of malarial fevers, was very prevalent. The total admissions amounted to 2,688, of which this one cause accounted for 1865. In spite of 326 admissions per 1,000 from dengue, the total cases of sickness at Agra equalled only 1,222, but this low ratio may be in a measure due to the long continuance of cholera at this station, and to the fact that at such times few cases are taken into hospital which can well be treated in barracks. Nearly all the stations in this group show a low death-rate. In three out of the seven, it was under 7 per 1,000, and in two others under thirteen.

The Punjab.

136. Sickness was very prevalent in the Punjab, and the death-rate in this province chiefly owing to cholera was very high. The admissions into hospital equalled 1,667, the daily sick 56 and the deaths 32·43 per 1,000. The ten years from 1860-69, give on the average 1,740, 56 and 25·24. In 1870 the figures were 2,323, 69, and 24·48, and in 1871, 1,594, 54 and 18·13. Besides cholera there was no very special cause of death. The ratio of mortality from this disease alone was 13·89; next to it comes enteric fever, but the loss it occasioned 2·72 though considerable was comparatively trifling. There are 15 stations in this province occupied by European Troops; among them is the Cherat hill, but as it is used merely as a temporary retreat by the Peshawur troops, it is classed beside Peshawur and not among the hill stations. The amount of sickness was little influenced by dengue, from which only Umballa suffered and that to a very trifling extent. At many places malarial fevers were very prevalent, especially at Peshawur and Nowshera. At Peshawur the total admissions from all causes amounted to 2,877 per 1,000, of which malarial fevers contributed over 1,800. The advantage derived from Cherat is well shown by the statistics, for here during the seven months of occupation the cases of fever were only 181, and the total admissions into hospital only 565 per 1,000. At many of the Punjab stations the mortality also was very heavy. Among these may be instanced Fort Lahore, Meean Meer, Peshawur, and especially Phillour, where out of a strength of 64 men 15 died, all of cholera and fever, or a proportion of 234·38 per 1,000.

Hill stations.

137. The hill stations of Bengal in 1872 yield results much less favorable than usual. Except at Raneekhet there was no great sickness, but here owing chiefly to the prevalence of venereal affections, of diarrhœa and respiratory diseases, the admissions into hospital equalled 1,194 and the sick-rate 69 per 1,000. The mortality also at this station was very heavy, 37·58 per 1,000. There were 18 deaths, 7 of which were due to dysentery and 4 to enteric fever. Dugshaie during 10 months' occupation gives a death-rate of 27·66, a very marked contrast to the previous experience of this station. As has been already detailed in the first section of this report, after an absence of many years cholera appeared here, and of the total of 26 deaths 20 were the result of this disease. At Subathoo and Chuckrata which also experienced the influence of the epidemic, but in a very minor degree, the death-rate was under 8 per 1,000.

Convalescent Depots.

138. Table XII shows the results in the convalescent depôts. Calculated on the period of occupation, the admissions into hospital equalled 1,029, the daily sick 96 and the deaths 29·74. It is worthy of notice that in spite of the exceptional prevalence of cholera at both Kussowlie and Murree, the death-rate was lower than that of the 10 years 1860-69, during which it averaged 30·75. In 1870 the ratio was 22·62 and in 1871 only 12·75. As a rule, both the sickness and mortality at these depôts represent chiefly the influences of those stations from which the men have come, but in 1872 both Kussowlie and Murree suffered severely in the cholera epidemic. At the former, out of 31 deaths 13 were caused by cholera, and at the latter all the 25 deaths, except 2.

Proportion of troops in the hills and plains of Bengal.

139. According to table No. XI, the strength of the troops in the hill stations was 3,379, but if the average during the seven months of the hot weather and rains, the season during which they are removed from the influences of the plains, be taken as

the basis of calculation, the number is raised to 4,079. The total strength of men in the hill stations during this period of 1872 was thus 7,159 as shown in the following details:—

At Cherat, included in the Punjab Table	760
Hill stations	4,079
Hill Depôts	2,320
	7,159

or about a fifth of the whole force of 36,507 men forming the European Army of Bengal.

Results in the groups of Madras and Bombay.

140. It would occupy too much space to discuss the details of the various groups of the Madras and Bombay Presidencies. They may be studied in Tables XIII—XVII, and the general results seen at a glance in No. XIX, where they can be compared side by side with those of the different groups of Bengal as shown in No. XVIII. The daily sick-rate varied from 60 in Southern India to a minimum of 36 in Burmah and Pegu. The last ratio is lower even than that of the hill stations of Bengal. In this part of the country the admissions into hospital were also few, only 947 per 1,000 or little over that of the Bengal hill stations Rajpootana, Scinde and Aden give a maximum of 1,785, which is higher than that of any of the groups in this presidency, except Bengal Proper. This result is in a measure due to the prevalence of dengue which contributed 224 cases per 1,000, a higher ratio than that due to this disease in any of the other groups of Madras and Bombay, all of which, however, suffered to some extent. The death-rate in Burmah and Pegu was only 10·50, the most favorable of any one of the groups throughout India. In the other parts of Madras and Bombay it varied from a maximum of 23·98 in Rajpootana and Scinde, to 13·54 in Southern India.

Meteorology of 1871, Bengal Proper.

141. Mr. Blanford's report on the meteorology of Bengal Proper in 1872 supplies much valuable information. His observations are all the more important, because they are founded on data recorded not only within that province, but also at stations in other parts of the country. A complete scheme of meteorological reporting for all India which is so essential for the proper study of epidemic disease still remains to be inaugurated. The following extracts from Mr. Blanford's report relate to the chief atmospheric phenomena of the year.

Barometric Monthly Means for 1872 reduced to Sea-level.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Galle ...	29·905	29·900	29·898	29·823	29·849	29·812	29·848	29·851	29·860	29·872	29·798	?	?
Colombo ...	·913	·913	·900	833	·851	·821	·857	·856	·881	·883	·846	29·883	29·870
Trincomalee ...	·949	·953	·921	·834	·789	·751	·781	·777	·811	·826	·852	·899	·845
Jaffna ...	·957	·944	·911	·826	·785	·747	·783	·782	·817	·835	·853	·905	·845
Port Blair ...	30·001	·998	·976	·888	·840	·812	·827	·825	·863	·879	·916	?	?
Madras ...	·021	·987	·935	·849	·729	·715	·739	·744	·789	·836	·915	·969	·852
Vizagapatam ...	·032	·973	·892	·822	·697	·637	·629	·638	·739	·813	·943	·991	·817
Akyab ...	·030	·979	·907	·832	·754	·698	·694	·702	·792	·845	·925	·958	·843
False Point ...	·067	·985	·891	·812	·690	·571	·587	·611	·750	·838	·972	30·013	·816
Cuttack ...	·029	·960	·865	·786	·680	·577	·593	·621	·758	·846	·985	·012	·809
Saugor Island ...	·042	·970	·877	·788	·677	·562	·581	·603	·739	·835	·960	?	?
Chittagong ...	·042	·996	·902	·829	·742	·669	·664	·673	·787	·857	·941	29·980	·840
Calcutta ...	·045	·979	·864	·778	·672	·574	·587	·609	·744	·846	·964	·998	·805
Jessore ...	·041	·976	·852	·773	·676	·588	·593	·614	·741	·845	·960	·986	·804
Dacca ...	·044	·978	·859	·787	·700	·625	·615	·637	·755	·846	·952	·987	·815
Silchar ...	·046	·988	·889	·829	·740	·664	·647	·658	·774	?	?	?	?
Hazraeebaugh ...	?	?	?	?	?	?	·543	·571	·716	?	·988	30·033	?
Berhampore ...	·053	·980	·847	·758	·654	·576	·580	·603	·741	·850	·970	30·001	·801
Monghyr ...	·060	·979	·840	·746	·644	·556	·564	·587	·727	·852	·981	·020	·796
Goalparah ...	·011	·907	·851	·759	·699	·632	·594	·656	·781	·907	·996	017	·817
Gya ...	·061	·976	·835	·728	·593	·503	·527	·564	·715	·848	·982	·012	·779
Dehree ...	·090	30·005	·867	·737	·593	?	?	?	?	?	?	?	?
Patna ...	·061	29·997	·846	·741	·626	·535	·526	·562	·712	·850	·981	·011	·787
Arrah ...	·075	30·004	·883	·738	·595	·501	·507	·540	·705	·838	·997	·035	·785
Benares ...	·083	·006	·878	·776	·645	·550	·552	·587	·743	·882	30·039	·040	·815
Jhansi ...	·035	29·976	·871	·737	·621	·510	·515	·571	·706	·833?	29·960?	·035	·783
Allahabad ...	·069	·988	·870	·801	·632	·525	·540	·567	·774	·846	·995	·028	·803
Lucknow ...	·084	30·015	·886	·764	·646	·540	·555	·564	?	?	?	·029	?
Agra ...	·086	29·985	·864	·737	·558	·419	·507	·546	·702	·855	·982	·024	·772
Bareilly ...	·087	·998	·873	·761	·633	·440	·543	·567	·724	·877	·993	·030	·794
Roorkee ...	·061	·995	·887	·757	·608	·495	·529	·568	·724	·871	30·034	·031	·797
Jabalpore ...	·037	30·037	·889	·784	·614	·534	·547	·595	·731	·897	·028	·053	·812
Nagpore ...	·007	29·958	·846	·751	·626	·552	·577	·599	·709	·840	29·972	29·993	·786

Comparison of Barometric Means of 1872 *with the averages of the five years,* 1867—71.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Port Blair ...	+ 040	+ ·034	+ ·051	+ ·023	+ ·032	+ ·014	+ ·012	+ ·006	+ ·017	+ ·004	— ·008	?	?
Madras ...	+ ·023	+ ·016	+ ·009	+ ·013	— ·018	+ ·016	+ 005	— ·018	+ ·007	— ·019	— ·038	— ·037	— ·003
Akyab ...	+ ·013	+ 028	— ·010	— ·030	— ·020	— ·012	— ·020	— ·030	+ ·011	— ·016	— ·011	— ·079	— ·015
False Point ...	+ ·012	— ·006	— ·034	— ·019	— ·027	— ·033	— ·009	— ·034	+ ·035	— ·033	— ·035	— ·060	— ·020
Cuttack ...	— ·040	— ·020	— ·039	— ·004	— ·021	— ·053	— ·036	— ·055	+ ·014	— ·058	— ·059	— ·086	— ·038
Saugor Island ...	+ ·015	+ 022	— ·008	— ·002	— ·009	— ·001	+ ·028	+ ·007	+ 067	+ ·002	— ·022	?	?
Chittagong ...	+ ·039	+ ·050	+ ·021	+ ·010	+ ·007	+ 039	+ ·035	+ ·009	+ ·060	+ ·009	— 031	— ·048	+ ·017
Calcutta ...	+ ·005	+ ·015	— ·024	— ·014	— ·013	+ ·004	+ ·018	— ·020	+ ·046	— ·013	— ·037	— ·063	— ·008
Jessore ...	+ ·026	+ ·033	— ·019	0	— ·010	+ ·031	+ ·038	— ·006	+ ·046	— ·008	— ·028	— ·061	+ ·003
Dacca ...	+ ·038	+ ·020	— ·022	— ·026	— ·014	+ ·030	+ ·021	+ ·005	+ ·041	— ·007	— ·036	— ·060	+ ·001
Silchar ...	+ ·049	+ ·031	— ·002	+ ·006	+ ·012	+ ·037	+ ·007	— 029	+ ·003	?	?	?	?
Shillong ...	— ·009	— ·033	— ·017	— ·002	+ ·027	+ ·005	— ·013	— ·041	— ·009	— ·018	— ·035	— ·054	— ·017
Goalparah ...	+ ·003	+ ·033	+ ·015	— ·013	+ 023	+ ·039	— ·014	+ ·024	+ ·064	+ ·088	+ ·030	— ·005	+ ·026
Darjeeling ...	+ ·045	+ ·019	+ ·068	+ 019	+ ·046	+ ·052	— ·043	+ ·038	+ ·050	+ ·026	+ ·021	— ·004	+ ·035
Berhampore ...	+ ·036	+ ·035	— ·010	+ ·015	+ ·019	+ ·069	— ·047	— ·004	+ ·050	+ ·014	— ·005	— ·042	+ ·019
Monghyr ...	+ ·030	+ ·045	— ·009	— ·002	— ·009	+ ·030	+ ·027	— ·016	+ ·048	+ ·003	— ·017	— ·049	+ ·007
Hazareebagh ...	?	?	?	?	?	?	+ ·010	— ·027	+ 049	?	— ·023	— ·045	?
Patna ...	+ ·021	+ ·026	— ·024	— ·016	— ·027	+ ·008	— ·015	— ·048	+ ·021	— ·027	— ·063	— ·065	— ·017
Benares ...	— ·009	+ ·002	— ·031	— ·018	— ·006	+ 018	+ ·016	— ·020	+ ·060	0	— ·029	— ·058	— ·006
Jhansi ...	— ·033	— ·040	+ ·005	— ·014	— ·016	+ ·037	+ ·048	— ·016	+ ·042	— ·037	— ·069	— ·046	— ·009
Lucknow ...	+ ·002	+ ·025	— ·009	— ·001	+ ·014	+ 024	+ ·029	— ·029	?	?	?	— ·066	?
Agra ...	+ ·008	— ·014	— ·034	— ·043	— 030	— ·013	+ ·047	— ·023	+ ·036	— ·010	— ·048	— ·062	— ·015
Roorkee ...	— ·002	+ ·016	— ·011	— ·006	— ·008	+ ·001	+ ·017	— ·002	+ ·050	+ ·013	+ ·012		?
Jubbulpore ...	+ ·019	+ 025	+ 001	+ ·012	— ·018	+ ·013	0	— ·033	+ ·070	+ ·038	+ ·001	— ·007	+ ·010
Nagpore ...	— ·002	+ ·010	+ .013	+ ·033	+ ·004	+ ·018	+ ·013	— ·046	+ ·036	+ ·005	— ·026	— ·052	+ ·001

Barometric pressure.

In the first two months of the year the pressure was abnormally high in Eastern Bengal and over the Gangetic delta, and in the lower part of the Gangetic valley as far westward as Patna. But at Cuttack it was much below the average; and such was also the case apparently at Jhansi. In the North-West Provinces generally, with this exception, and in Central India, the pressure was about what is usual in January, and a little above the usual amount in February. In March the pressure was generally below the average; most so in Orissa and the upper part of the Gangetic valley. At Chittagong, Goalparah, and Darjeeling, however, it remained unusually high; while over the delta it was much below the average. In April and May there appears to have been a lower pressure than usual at coast stations around the northern part of the Bay, probably therefore over that part of the Bay itself. In May this was the case also at Madras, and a severe cyclone passed over the Presidency town on the 2nd of that month, causing great loss to the shipping in the roads; but at Port Blair it was unusually high, and had been so since the beginning of 1871. The pressure remained below the average in Orissa, and at Agra it was abnormally low from February to June; most so in the month of April. At Nagpore it was above the average from February to July, and at Darjeeling and Goalparah it was unusually high throughout the year, except in April at Goalparah. In Eastern Bengal it was somewhat higher than usual in May. In June and July there was a higher pressure than usual, generally in Northern India, and a lower pressure at the head of the Bay. Stormy weather was very prevalent in the latter area, and on the last days of June a cyclone was formed, which caused some loss of shipping at the Sandheads. As a further consequence of the abnormal distribution of pressure, the rains were unusually scanty in Northern India in the earlier part of the usual rainy season. In August, however, a general fall of pressure took place, and it became exceptionally low in Central India, Behar, and Orissa, and below the average in the North-Western Provinces generally. But it also remained low over the Bay of Bengal; and although towards the end of this month and the earlier part of September the monsoon rains appeared to set in with their usual copiousness, they did not last long. A rapid increase of pressure in September brought it almost everywhere above the average; and this was especially the case in Central India, Lower Bengal, and over the country to the west of the delta. A cyclone passed across the delta, in the neighbourhood of Jessore, on the 20th of the month. In the last three months of the year the pressure was below the average, especially in December. In these months the whole of the Bay, as well as Northern India, was included in the area of abnormal depression, and in the latter part of October very stormy weather prevailed in the latitude of Madras and the Andamans. On the 26th a cyclone passed over Narcondam and the Cocos Islands, levelling the forest which covered the former island (which appears to be an extinct volcano), so that a party who visited the island in March of the present year, 1873, found it impracticable to ascend the cone.

Monthly Mean Temperatures of 1872, *reduced to Sea-level.*

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Galle ...	78·6	80·4	82·5	81·7	83·1	81·0	80·7	80·0	79·2	80·3	79·4	79·1	80·5
Colombo ...	81·3	81·7	83·3	83·2	85·3	82·7	82·6	81·4	80·1	81·5	81·7	81·1	82·2
Trincomalee ...	79·9	80·7	83·7	85·2	88·1	87·0	86·3	85·5	83·8	82·9	80·0	79·9	83·6
Jaffna ...	79·3	82·2	83·7	85·3	84·6	84·1	83·2	82·1	82·0	82·5	80·5	79·5	82·4
Port Blair ...	*80	*80·1	*81·1	*84·6	*82·0	*82·7	*80·3	*79·7	*79·2	*79·6	*81·3	*79·9	*80·9
Madras ...	†78·2	†79·4	†82·9	†85·1	†87·6	†86·0	†86·3	†85·0	†84·4	†80·7	†78·6	†76·8	†82·6
Vizagapatam ...	77·2	80·0	84·2	87·2	89·6	86·8	83·7	84·3	84·0	81·9	79·8	76·4	82·9
Akyab ...	70·8	71·6	78·6	83·2	83·2	82·4	81·0	80·8	81·9	81·2	77·7	72·3	78·7
False Point ...	71·5	75·7	81·7	84·9	87·4	86·4	84·2	84·7	85·0	83·1	77·9	71·4	81·2
Cuttack ...	72·9	76·6	84·1	87·0	90·5	87·1	83·0	82·7	82·9	80·4	75·5	71·8	81·2
Saugor Island ...	69·2	74·4	82·6	85·4	86·8	85·5	83·4	84·0	83·6	80·4	75·4	P	P
Chittagong ...	68·2	70·8	79·6	82·9	82·5	83·2	81·0	81·1	81·4	80·4	76·4	70·4	78·2
Calcutta ...	69·2	72·9	83·1	85·9	87·0	85·4	83·3	83·1	83·2	81·6	76·6	70·3	80·1
Jessore ...	66·1	70·1	83·5	85·0	84·1	84·4	82·3	83·2	82·6	80·8	74·9	68·0	78·8
Dacca ...	66·7	69·6	81·8	82·4	82·9	84·1	83·0	83·5	83·0	81·1	75·7	69·0	78·6
Silchar ...	64·3	65·9	76·0	77·5	79·6	82·5	81·5	82·6	80·8	79·7	73·9	67·0	75·9
Goalparah ...	64·7	67·0	77·1	78·7	79·0	80·4	82·5	83·1	80·8	77·4	72·8	68·5	76·0
Berhampore ...	65·7	68·0	81·3	85·7	87·2	86·1	84·3	84·6	84·0	81·3	75·5	68·3	79·3
Monghyr ..	62·8	66·7	80·3	86·0	88·7	88·3	84·2	84·6	83·9	80·5	73·5	66·0	78·8
Hazareebaugh ...	65·7	68·2	81·4	87·2	91·8	88·4	81·9	82·2	82·2	P	72·2	67·0	P
Gya ...	64·6	68·3	83·9	89·5	94·1	93·2	85·1	84·3	84·1	80·7	73·0	66·9	80·6
Patna ...	62·0	64·9	79·8	87·2	89·9	88·8	85·1	85·2	84·2	80·2	72·3	65·1	78·7
Benares ...	61·7	65·5	80·3	86·4	92·6	91·3	85·0	84·6	84·0	79·2	70·1	63·7	78·7
Jhansi ...	64·5	70·8	84·8	90·8	98·0	96·8	85·3	83·3	85·8	80·0	77·5	69·5	82·3
Allahabad ...	62·1	65·1	78·6	83·6	90·6	90·1	84·1	82·1	82·8	78·3	70·1	63·6	77·6
Lucknow ...	59·8	66·6	80·3	86·6	93·8	91·8	86·8	85·8	85·8	79·8	71·5	63·0	79·3
Agra ...	60·4	65·2	81·0	87·7	95·0	96·4	86·9	83·4	82 9	80·2	71·9	65 9	79·7
Bareilly ...	57 5	62·1	76·8	84·3	90·5	89·8	84·8	84·8	82·8	77·3	69·0	61·5	76·8
Roorkee ...	58·7	61·3	74·9	82·5	89·6	91·5	85·0	84·9	83·4	76·8	68·3	60·9	76·5
Jubbulpore ...	*66·8	*66·2	*80·6	*86·1	*96·6	*91·9	*82·8	*80·8	*81·8	*75·1	*67·3	*64·7	*78·4
Saugor ...	*67·5	*71·5	*84·7	*88·0	*94·8	*92·2	*81·0	*79·3	*80 4	*78·8	*74·1	*70·2	*80·2
Nagpore ...	*71·2	*75·5	*86·9	*89·2	*96·6	*91·0	*81·3	*80·5	*80·9	*78·2	*72·0	*71·0	*81·2
Hoshungabad ...	*71·4	*72·2	*84·8	*89·8	*96·2	*93·0	*81·2	*80·2	*81·9	*76·8	*70·7	*68·9	*80·6
Chanda ...	*71·3	*74·6	*85·8	*89·3	*96·3	*90·1	*80·9	*79·8	*79·1	*75·8	*68·6	*67·7	*79·9
Raipore ...	*71·8	*75·1	*85·7	*88·7	*97·6	*88·6	*79·9	*81·3	*81·1	*78·7	*72·4	*69·1	*80·8
Sumbulpore ...	*66·2	*68·7	*82·2	*92·3	*100·7	*97·0	*79·6	*78·0	*78·7	*75·3	*67·9	*63·5	*79·2

Comparison of the Temperatures of 1872 *with the averages of the four years,* 1868-71.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Port Blair ...	+1·0	+0·7	—1·1	+0·5	+0·1	+0·8	—0·6	—0·9	—0·9	—0·9	+1·2	+0·4	......
Madras ...	+1·4	—0·2	—0·1	—1·0	—2·0	—1·9	+0·4	—1·3	+0·1	—1·8	—0·1	—1·0	—0·4
Akyab ...	+0·3	—3·0	—0·3	—0·4	—1·2	+0·1	......	—0·8	—0·1	—0·3	—0·1	+0·3	—0·5
False Point ...	+0·3	+0·2	+0·6	+0·9	+0·3	+0·1	—1·1	—0·4	—0·2	—1·0	+0·5	+0·5	+0·1
Cuttack ...	+2·5	+2·0	+3·8	+0·8	+1·3	+0·2	—1·2	—1·5	—0·5	—1·3	+0·7	+2·0	+0·7
Saugor Island ...	—0·2	+0·4	+2·7	+1·5	+1·2	+0·4	—0·7	+0·5	+0·5	—0·8	+0·4	?	
Chittagong ...	+0·4	—1·1	+1·5	+1·5	—0·7	+1·4	—0·1	—0·4	—0·3	—0·3	+2·0	+2·3	+0·5
Calcutta ...	+0·4	+0·4	+3·5	+2·3	+2·0	+1·7	+0·2	—0·1	+0·6	—0·1	+1·5	+1·8	+1·2
Jessore ...	+0·1	—0·7	+4·6	+2·7	—1·2	+0·9	—0·5	......	—0·2	+0·2	+2·9	+3·3	+1·0
Dacca ...	—0·8	—3·2	+2·0	+0·4	—0·7	+0·6	—0·2	—0·3	—0·2	—0·5	+0·8	+0·5	—0·1
Silchar ...	—0·3	—2·5	+1·3	—0·9	—1·7	+0·4	—0·8	+0·8	—0·8	—0·3	+1·6	+1·8	—0·1
Goalparah ...	—0·6	—1·4	+3·1	+0·6	—0·2	—0·5	+0·5	+0·8	—0·2	—1·9	+0·7	+2·7	+0·3
Shillong ...	—1·5	—2·8	+1·7	+2·0	—1·0	+0·1	—0·6	+0·3	—0·1	—0·4	+2·7	+2·2	+0·2
Darjeeling ...	—0·4	—2·3	+3·1	......	—0·3	—1·4	—0·9	—0·3	—0·6	—1·0	+1·6	+3·2	+0·1
Berhampore ...	+0·3	—2·8	+3·0	+0·1	+0·8	+1·4	+0·2	+0·4	+0·5	—0·5	+1·9	+2·0	+0·6
Monghyr ...	—0·4	—2·2	+2·8	+0·9	+1·5	+1·7	—0·3	+0·4	+0·7	—0·3	+1·7	+2·1	+0·9
Hazareebaugh ...	—0·3	—2·3	+2·8	+0·3	+1·6	+2·7	+1·6	......	+0·6	?	—1·0	+1·1	
Patna ...	+0·9	—1·7	+2·8	+3·1	+2·5	+1·2	+0·6	+1·4	+1·5	+0·9	+3·0	+2·9	+1·6
Benares ...	+2·6	—2·9	+4·5	—0·4	+0·8	+0·5	—1·5	—1·2	—0·6	—0·6	+1·0	+4	+0·5
Jhansi ...	+1·9	+0·7	+7·6	+3·4	+1·5	+4·1	—0·1	—0·8	+2·0	+0·3	+6·1	+4·7	+2·6
Agra ...	+0·5	+0·1	+6·5	+2·4	+0·2	+2·3	—1·8	—2·5	—2·2	—0·1	+1·4	+2·9	+0·8
Roorkee ...	—0·9	—3·0	+3·3	+0·1	—1·2	+0·5	—1·5	—1·3	—1·6	—1·2	+2·6	+1·4	—0·2
Jubbulpore ...	+0·9	—4·0	+4·1	+1·1	+3·4	+1·5	+1·2	—0·1	+0·1	—2·9	—3·3	—1·0	+0·1
Nagpore ...	—1·6	—1·9	+3·5	—0·4	+0·5	+2·7	+0·6	—0·7	—0·4	—1·6	—2·6	......	—0·2

Temperature.

At Cuttack, as well as at the neighbouring stations, False Point and Saugor Island, the temperature was above the average during the first six months of the year; especially in the month of March. The same was the case at Jhansi and Agra. In Bengal generally, the temperature was two or three degrees lower than is usual in February, and three or four degrees higher in March. In April and May the distribution of temperature was somewhat peculiar. There appears to have been an excessive temperature in the country lying to the west of Orissa, if the register of Sumbulpore can be trusted; and between this and Western Rajpootana (where the temperature was also high) lay a comparatively cool tract, the lowest temperatures of which were those of Allahabad and Jubbulpore. April was unusually hot in most parts of Northern India, and May also, excepting in the eastern districts of Bengal. In June the absence of the usual rains caused the temperature to remain unusually high, but in the latter part of the rainy season, and in October, it fell to somewhat below the average. In July and the succeeding months, the tract between Orissa and Nagpore that had experienced so high a temperature in April and May, became the coolest in Northern India, while unusual heat prevailed in Behar, and in a circumscribed area which included Lucknow and Jhansi, in the North-West Provinces. In November and December the temperature was above the average almost everywhere; and southerly winds were very prevalent.

Humidity.

At Dacca and False Point, especially the former, the air was more humid than usual in almost every month of the year, while the reverse held good at Port Blair and Darjeeling. At Cuttack, the first seven months were drier, the last five damper than usual; while at Patna the humidity of the first six months was above the average that of the last six below it. Taking the mean of all the stations January was a damper month than usual. The excess of humidity decreased in February and March, and in April the mean of all the stations fell below the average, the deficit increasing up to June. A rapid rise in August brought the general humidity above the average, and after a fall in September it increased again up to the end of the year, December being the dampest month (abnormally) in the whole year.

Rainfall.

In most parts of Bengal the rains of 1872 were unusually light. At Calcutta the fall was 15 inches below the average; at Kishnagur more than 16 inches; at Burdwan nearly 18 inches, and at Saugor island about 30 inches less. At Bograh and Mymensing the deficit amounted to 23·5 and 18·7 inches, and at Dacca to nearly 11 inches; so also Tipperah and down the Arakan Coast, in Northern Bengal, and western and southern part of Behar. Somewhat anomalously certain small tracts interspersed among these were fortunate exceptions to the rule. Thus Berhampore and Sooree in the north-west of the delta received rather more than the average, and so also to a less extent did Jessore. In the south-east Noakhally was similarly favored, and also Chumparun and Tirhoot in Behar. In Orissa, the rainfall of the year was greatly in excess of the average, and such was also the case at Sumbulpore and in Chota Nagpore, south of the Damoodah. In Assam, again, it generally exceeded the average, especially at Nowgong, where it was more than half as great again. At Sylhet the fall was one-third greater than the average, while at Cherrapoonjee it was considerably below it. In the North-Western Provinces and the Central Provinces the fall appears to have been either about the average or above it. In Lower Bengal there was a deficiency of rain in every month, except October; but such rain as there was fell seasonably, so that nothing like any general failure of crops ensued. The excessive rainfall in Orissa was chiefly owing to the storms which prevailed in the head of the Bay in June and October. The high flood of the Mahanuddy in July, which at one time seriously threatened to sweep away the town of Cuttack, had, however, no connection with these storms, and must have been produced by rain in the interior brought by the winds from the West Coast. In the North-Western Provinces and Behar the rain in January was somewhat greater than usual, but the hot weather months, June and July, were generally dry, and rain did not fall generally and plentifully till August. In Assam, Sylhet, and Cachar, there were many minor irregularities in the rainfall of the year, but except at Nowgong and Sylhet, the first of which had an excessive fall in April, May, July, and August, and the last in June, July, and September, there was no very striking departure from the average distribution.

Winds.

In the report for 1871 it was observed, that "in October and November of that year, the land-winds set in much as usual in Behar and the North-Western Provinces; but in Bengal they were far less steady, and up to nearly the close of the year, the westerly or north-westerly winds were decidedly weaker than on the average." January 1872 was equally characterized by this weakness or partial failure of the usual land-winds from the Upper Provinces. On the coast of Orissa and the Northern Circars the winds were rather southerly than northerly, and at Nagpore there was a decided preponderance of southerly elements. In February the land-winds strengthened in the Gangetic valley, but on the Madras coast the north-east monsoon had ceased; southerly breezes prevailed, and the tendency to an anticyclonic circulation* of the wind round the Bay of Bengal was greater than usual. In March the course of the winds was about what is usual in this month, except that southerly elements were somewhat more in excess. In April the abnormally high pressure at Nagpore and the low pressure in Orissa produced a remarkable preponderance of north-west winds at Cuttack; and in this and the following month, westerly winds were more than usually prevalent at Hazareebaugh and Benares. In the Central Provinces, on the other hand, the direction of the prevailing currents, which is usually from north, north-west, and west, continued to predominate from south; and in April, at Nagpore, from east. In June westerly elements continued to preponderate in Orissa, but were deficient in the Central Provinces, where the wind remained southerly. On the Arakan coast, in the Gangetic delta and plain of Behar, and the North-Western Provinces, south and east winds were unusually predominant. In July the excessive southerly character of the winds in Central India, and even up to Benares, was very marked, but in Bengal the average direction was about normal. In August the same state of things prevailed, and the westerly winds that are usually marked in Central India, Orissa, and Western Bengal in this month, were either very weak or altogether wanting, indicating the absence of the usual monsoon from the west coast. September was similarly characterized. In the last two months of the year, in ordinary seasons, cool westerly winds set in steadily from the Upper Provinces, being, as I have shown elsewhere, the outflow of air cooled by radiation on the plains of the interior, and forming the source of the winter monsoon of the circumjacent seas. But in 1872 westerly winds were as remarkably deficient as they had been during the greater part of the year, while at stations in and near the Himalaya, southerly winds were as unduly prevalent as they had been previously in the Central Provinces. There was, therefore, an apparent failure of the winter monsoon, as there had been previously of the south-west monsoon in Eastern India.

---

* That is, a circulation in the reverse direction to that which obtains in cyclones, the motion in the northern hemisphere being coincident with that of the hands of a clock. The term *anticyclone* was introduced by Mr. Galton in his 'Meteorgraphica.'

Summary.

The most striking characteristics of the meteorology of 1872 in Bengal were the general deficiency of rainfall, and the weakness of westerly winds. The latter peculiarity was even more strongly marked in the Central Provinces, but the rainfall there was abundant. In Orissa the rainfall was also abundant in the monsoon months, following upon an unusually high temperature, and low pressure in the earlier months of the year. Storms were of greater frequency than usual in the Bay of Bengal, both at the beginning and ending of the monsoon, and the atmospheric pressure over the northern part of the Bay was low during the greater part of the year. In the south-east of the Bay, on the other hand, the pressure was unusually high up to the close of the south-west monsoon, but especially in the first six months of the year. Lastly, in Rajpootana, to judge from the registers of the two stations, Agra and Jhansi, there appears to have been an unusually high temperature and low pressure during the first five months of the year, and again during the last three. How far this extended, there are no data to show; but a very unusual depression in this region would have the effect of rendering the winds of the Central Provinces more southerly than usual, especially if the pressure in the latter area were (as it appears to have been) in excess of the average. It would further explain the deficiency of westerly winds in Bengal, which was so marked during the greater part of the year. The deficiency of rainfall in Bengal is, I think, to be attributed partly to this cause also, since in ordinary years a certain proportion of rain reaches Bengal with the westerly winds from the Bombay coast. Such is the case more particularly in Western Bengal and Orissa; but during the monsoon of 1872 these winds were scarcely felt. On the other hand, the low pressure in Orissa and over the Bay would tend to arrest those rain-bearing winds which come from the south and south-west, so that rain from this quarter would also be deficient in Bengal. In the present state of our knowledge, little more can be done than to indicate such partial interdependence of local irregularities as the above. Until something more is known of the normal and abnormal meteorology of the Punjab, Western and Southern India, it would be futile to attempt any comprehensive discussion of the peculiarities of any given season.

Meteorology of the North-Western Provinces.

142. The following statement of the chief meteorological features observed in the North-Western Provinces during the year has been furnished by Dr. Murray Thomson, the Meteorological Reporter of the Province, in anticipation of the appearance of his annual report.

Summary of the weather.

"In January the mean temperature was one degree colder, and the humidity about 25 per cent. higher than the average of the last five years. Rain fell in the first four days, on the 14th, 15th or 16th, and 24th or 25th. Fogs were frequent in the mornings of the first half of the month, and during that time the weather was chilly and damp. The same cool and moist weather with cloudy skies extended into February, especially in the first eight days; the mean temperature of the whole month was nearly four degrees lower than in the previous five years. In the last five days of February, and the first six of March, the sky was cloudy as a rule, and the temperature low, the rest of March, except the four days from the 12th to the 16th, and from 29th to the end, had clear and rather warm weather, the mean temperature rising considerably over the average. April was a very normal month, except, perhaps, in the absence of storms. Those which occurred on the 10th at Benares, on 16th and 18th at

Goruckpore, and the 20th at Agra and Dehra, were very slight. In May also the weather was much as usual; some mild dust-storms took place between the 10th and 20th, which kept the weather cool and agreeable till nearly the end of the month. The rains set in on the 23rd of June, but previous to that signs of their coming were given in several showers which fell from the 12th to the 16th, and the occurrence of clouds about the same period. In the first third of June the weather was hot and dry, but not unusually so. The weather during July, August, and September was very characteristic of the rains—constant clouds in the sky with rainy periods followed by intervals of a few days of fair weather. As a rule, the air is still in the rainy months, especially from sunset to sunrise; and this was very notably the case during the last rainy season. The rains came to an end from the 21st to the 24th of September, and along with their cessation came the usual clearing up of the sky; a change of wind from an easterly or south-easterly to a westerly or north-westerly direction; and a gradual decrease in temperature. There was nothing unusual to record during the year; the weather was altogether very normal."

Atmospheric pressure.

"The barometer throughout the year was slightly higher (·01 to ·02 of an inch) than the average of the last five years. Local peculiarities in the distribution of the air pressure were of a very unimportant kind. The Calcutta readings when charted side by side with those of stations in the North-Western Provinces gave curves bearing a great resemblance. The only notable difference was one in June, from the 16th to the 27th the barometer fell; this fall was broken by slight rises on the 20th and 23rd in the North-Western Provinces, but only on the 20th in Calcutta. From the summit to the base of this depression there was a difference of ·780 of an inch at Calcutta, while in the North-Western Provinces it was nowhere greater than at Benares, at which it amounted to ·420 only."

Temperature.

"The mean maximum and minimum as well as the general mean temperatures were almost the same as the average of the last six years. The course of temperature also was much like that of those former years. It increased rapidly during January, February, and March, and to a less extent through April and May. The heat was still great in the early part of June, but a decrease set in with the rains. The decrease, however, which ensues in the rains was only moderate in amount; it was not till October that there was any marked difference, but during the latter part of that month and throughout November and December the temperature fell as swiftly as it rose in January, February, and March. The differences in temperature in the stations on the plains are more striking in the cold than in the hot weather; the cause of this is probably the prevailing winds. The west wind of the dry hot period and the south-east of the rains have both a warm source, and in blowing over the area meet with no conditions which would tend to alter their temperature. On the other hand, the north-westerly wind of the cold weather is a cold wind at first, and gradually warms as it meets the denser air of the lower parts of the country."

Humidity.

"This is a more irregular weather feature than the temperature. The means of 1872 were from 1 to 6 per cent. above the average of the last five years in some stations, and four years in others. The difference, however, was greater than this in January, as has been stated in the summary of weather given above. In stations on the plains the humidity is moderately high in the early months, diminishes greatly in April and May, and rapidly increases in the rainy season, again decreases in October and November, and again increases in December."

Rainfall.

"In Agra, Lucknow, and Benares, the total rainfall was less in 1872 than the average of the last five years; in all the other stations it was greater. During the rainy season the fall was abundant everywhere, although it did not equal that of 1871, which was a year of high average rainfall. The rains also set in at the normal time. Showers fell all over the North-Western Provinces from the 12th to the 16th, but it was not till the 23rd that the rainy season may be said to have fairly commenced. The distribution of the rainfall in the North-Western Provinces is as follows:—The tract of country nearer to the Himalaya is where the largest precipitation takes place, as the high numbers of Dehra, Roorkee, Bareilly, Goruckpore, and Lucknow show. The area of the next greatest precipitation is the most eastern represented by Benares and Allahabad. In the central, south-west, and south-western areas represented by Futtehgurh, Meerut, Jhansie, Agra, and Ajmere, the amount of rain is decidedly less. The cause of this seems to be that the monsoon current, which is from the east or south-east, has discharged already a large part of its moisture before it reaches Futtehgurh, Meerut, and Agra. This at least is the case with the lower strata of the current. The upper strata retain the greater part of their moisture until they meet the hills. It is the very outermost range of these which receives the greatest discharge, as may be seen from the rainfall of Raneekhet, which is situated a little way into the interior, and has some high hills between it and the plains. The same cause also accounts for the lower rainfall of Ajmere, as it lies to the north and east of the Aravilli range, which intercepts a large part of the moisture of the south-west wind.'

Winds.

"The system of winds which prevail in this part of India is nearly the following, and the description it may be added applies most aptly to the winds of 1872. In the stations to the north and west, in the cold weather, north-west and westerly winds are most frequent. In places more in the centre of the area, and in the eastern part of it, the winds are westerly, with much less of the northerly element. In Ajmere and Jhansie north and easterly elements are more abundant. In the dry, hot weather, April, May, and part of June, the hot west winds are characteristic of the weather in the plains. These hot winds begin at 9, 10, 11 hours, and usually die down at sunset. In Roorkee, I have many times observed that the winds at this season go round with the sun, beginning in the east in the early morning, and gradually veering southwards, and settling in an almost due west direction at 14 or 15 hours. The wind, as this description implies, usually travels from east to west quicker than the sun."

"In the rainy season, the winds at the central and more easterly stations are east or south-east; and at those further north and west, like Bareilly, Meerut, Agra, and Roorkee, the winds are south-east, while in Jhansie and Ajmere they are south-west. This south-east wind is what corresponds in the North-Western Provinces to the south-west monsoon of the Indian Ocean and the Bay of Bengal. From the south-west direction it has in the latter, it is changed to an east in the interior, because the only way it can travel up-country is by the Gangetic valley; and the wind acquires more of a southerly element, the further it goes from the directive action of the mountain chains, especially of the Himalayas, the trend of which is north-west and south-east. At Jhansie and Ajmere the monsoon retains its original direction; this may be partly owing to the relative high altitude of these places as well as their situation, which, at least in the case of Ajmere, is quite out of the reach of the wind travelling up the Ganges, but from the position of the Aruvalli range to the south-west of Ajmere, it is not easy to see why the monsoon should preserve its original direction so constantly."

"The south-east wind is always a moist wind in Upper India; even in the cold weather it never blows for two or three days together, but signs of increasing humidity make their appearance often in the form of rain, still more often in the form of clouds. In by far the majority of cases the cold weather rain is preceded or accompanied by a south-east wind."

Meteorology of Oudh.

143. The report on the meteorology of Oudh prepared by Dr. Bonavia, Superintendent, Department of Science, Oudh, is for the official year, from the 1st April 1872 to 31st March 1873.* From this we learn that the barometric pressure was at its highest, 29·711, on the 29th December, and at its lowest, 28·960, on the 26th June 1872. The mean pressure was 29·354. The highest temperature in the shade was 114° on the 1st June 1872, and the lowest on the 12th January 1873, 36°; the mean temperature was 78° 5′. The range of the thermometer was 77° compared with 69° in the previous year. In the sun's rays the highest observation recorded was 165° and the lowest 85°. The highest degree of humidity was 1·000 (saturation) on the 17th May, 28th June, 8th and 31st July, 2nd, 8th 9th, 13th, and 19th August 1872, and the lowest ·118 on the 1st May 1872. The total rain-fall registered at the Lucknow Observatory was 41·128 inches, of which 22·735 fell in August. As regards winds, those from the west-north-west prevailed in April; from the north-west in May; from the east-south-east in June; from the east-south-east and south-east in July; from east-south-east in August; from the north-west and east-south-east in September; from the north-west in October and November; and from the west-north-west in December 1872.

Meteorology of the Punjab.

144. In the history of the cholera epidemic of 1872 mention has already been made of the unusual rain-fall in the Punjab. The fact is more clearly shown in the annexed table showing the measurements in the different districts of the Punjab in 1872 as compared with the average of the preceding five years:—

Stations.	Months.												Total for 1872.	Mean of 5 years, 1867-71.	Difference.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.			
Delhi	2·0	0·7	0·1	0·3	1·1	...	11·3	10·6	6·1	...	...	0·5	32·7	22·16	+ 10·54
Gurgāon	1·5	0·1	0·1	...	0·8	5·6	8·7	10·0	2·5	...	...	0·9	30·2	20·49	+ 9·71
Karnāl	4·5	0·1	0·9	0·2	0·6	8·1	12·7	7·3	2·1	0·1	...	0·9	37·5	24·94	+ 12·56
Hissār	1·6	0·1	0·8	0·3	0·9	3·0	10·0	10·2	2·7	...	...	1·2	30·8	14·12	+ 16·68
Rohtak	0·4	0·3	1·1	0·3	0·7	2·0	12·3	6·6	3·3	...	...	0·9	27·9	16·74	+ 11·16
Sirsah	1·4	...	0·2	0·2	0·9	2·2	7·0	4·6	1·5	...	...	1·7	19·7	11·97	+ 7·73
Ambālah	0·2	1·4	0·5	0·2	0·5	8·1	19·7	15·2	4·9	...	...	0·3	51·0	32·73	+ 18·27
Ludiānah	2·1	0·2	0·5	1·8	0·7	2·2	19·7	15·5	2·6	...	...	0·9	46·3	22·48	+ 23·82
Simla	...	3·5	1·6	2·1	1·6	11·0	14·7	21·1	5·9	...	...	0·7	62·2	62·50	— 0·30

---

* This report is contained in the Oudh *Government Gazette*, dated 12th July 1873.

STATIONS.		MONTHS.												Total for 1872.	Mean of 5 years, 1867-71.	Difference.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.			
Jālandhar ...	...	1·6	1·0	0·7	0·1	1·3	1·8	19·6	17·3	1·2	0·1	...	0·6	45·3	24·72	+ 20·58
Hoshiārpūr	...	1·3	1·7	0·3	0·2	2·9	1·3	14·0	11·8	8 4	0·2	...	1·4	43·1	30·51	+ 12·59
Dharmsālah	...	4·9	0·6	1 5	2·5	4·2	18·6	50·6	37·2	24·2	1·2	...	0·9	146·4	108·28	+ 38·12
Amritsar ...	...	0·9	0·9	0·5	0·7	1·3	1·7	9·4	7·1	5·4	...	...	0·4	28·3	18·76	+ 9·54
Siālkōt ...	...	2·0	2·8	2·8	1·7	1·8	0·6	6·1	1·6	3·5	...	...	0·4	23·3	40·38	— 17·08
Gurdāspūr	...	1·3	1·5	2·4	0·4	1·0	2·3	6·1	2·4	5·5	...	...	0·4	23·3	32·30	— 9·00
Lahore ...	...	0·9	0·8	1·4	...	0·6	2·6	6·3	2·8	1·7	...	...	...	17·1	14·52	+ 2·58
Firozpūr ...	...	0·5	0·5	0·2	2·0	0·6	5·8	8·4	10·7	3·3	...	...	0·2	32·2	17·90	+ 14·30
Gujrānwāla	...	2·7	1·0	2·4	0·3	0·4	1·5	3·1	7·4	2·8	...	...	0·2	21·8	22·04	— 0·24
Rāwalpindi	...	5·4	1·0	3·0	2·5	2·1	0·8	8·4	2·5	4·2	...	...	0·4	30·3	26·67	+ 3·63
Jhelam ...	...	1·7	2·2	1·5	1·3	0·9	0·9	5·9	1·2	1·2	...	...	1·0	17·8	17·20	+ 0·60
Gujrāt ...	...	1·7	1·1	3·6	0·7	0·5	0·9	13·9	5·1	2·7	1·2	...	0·4	31·8	27·90	+ 3·90
Shāhpūr ...	...	0·4	...	1·4	1·2	2·5	4·0	7·7	5·4	2·3	...	...	0·2	25·1	9·32	+ 15·78
Multān ...	...	0·1	...	...	0·2	...	...	3·0	1·5	0·7	...	...	...	5·5	6·26	— 0·76
Jhang ...	...	0·3	...	1·5	0·1	0·9	0·1	2·5	3·0	2·4	...	...	...	10·8	10·56	+ 0·24
Montgomory	...	0 3	...	...	...	0·2	1·0	5·1	1·3	1·5	...	...	...	9·4	10·34	— 0·94
Muzaffargurh	...	0·2	...	...	...	0·1	...	1·1	3·7	1·3	..	...	1·2	7·6	7·76	— 0·16
Derah Ismail Khān	...	...	0·5	1·2	0·3	1·6	...	3·0	0·3	1·0	...	...	...	7·5	7·04	+ 0·46
Derah Ghāzī Khān	...	...	...	2·3	...	...	...	0·5	2·9	0·3	...	...	...	6·0	5·70	+ 0·30
Bunnū ...	...	0·7	0·8	0·7	2·6	1·1	...	...	...	0·3	0·3	...	...	6·2	11·15	— 4·95
Peshāwar ...	...	1·5	0·7	2·1	2·2	1·7	0·1	2·7	5·1	0·4	...	...	...	16·5	10·90	+ 5·60
Kohāt ...	...	2·2	1·2	...	2·1	3·5	...	10·4	3·1	0·5	0·8	0·2	...	24·0	17·71	+ 6·29
Abbottabād	...	6·3	4·2	6·9	3·3	6 6	3·4	18·5	11·8	6·6	1·0	0·3	0·1	69·0	43·66	+ 25·34

History of the chief diseases in 1872. Small-pox somewhat more prevalent than in 1871.

145. Turning now from the general statistics of sickness and mortality in the three presidencies, and in the different groups of stations into which they have been divided, the history of the chief diseases demands attention, and as full details regarding cholera have already been given, the first to be considered here is small-pox. Throughout the European army of India in 1872 there were 54 cases of this disease, of which 25 occurred in Bengal, 16 in Madras, and 13 in Bombay, equivalent to ·7, 1·4, and 1·2 per 1,000. Of the 11 deaths due to this cause 7 took place in Bengal and 2 in each of the other presidencies, giving death-rates respectively of ·19, ·17, and ·19 per 1,000. These figures shew that the disease was more prevalent and fatal than it had been in the year previous. In Bengal, during the ten years 1860-69, the average annual ratio of cases was 2·2, and of deaths ·34. In 1870, the admissions equalled ·6 and the deaths ·18 per 1,000; in 1871 they were ·3 and ·03, a more favorable return as regards small-pox than that of any year except 1868. It will be observed from the opening table that all the cases but one throughout the country occurred during the first seven months of the year. The marked influence of season in determining attacks of small-pox is well illustrated in Dr. Bryden's ten years' tables. Of 848 cases which occurred in the European Army of Bengal during that period 135 were in January, 102 in February, 149 in March, 165 in April, 118 in May, 51 in June, 11 in July, 3 in August, 1 in September, none in October, 38 in November, and 75 in December.

More prevalent also among the people generally.

146. From Bengal Proper no information has been received regarding the general population; but the returns from Madras and Bombay and the different local Governments and administrations of this presidency, except Bengal, shew that small-pox was in nearly all of them more fatal, and hence it may be inferred more prevalent in 1872 than in 1871. The only exceptions to this rule are the North-Western Provinces and the Punjab, in which the mortality from this cause was somewhat less than what it had been in the previous year, and also British Burmah, which, so far as the records go, was never so free from the disease as it was last year. The monthly distribution of the deaths and the totals for the year in each province are shewn in the annexed statement.

Statement shewing the deaths registered from SMALL-POX *in the different Provinces during the year* 1872.

PROVINCES.	Population.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths.	Ratio of deaths per 1,000	Ratio for 1871.
Bengal*	......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3,803†
North-Western Provinces	30,884,022	1,158	967	1,740	4,311	6,455	6,164	3,710	2,016	1,042	582	520	1,405	30,073	·97	1·29
Punjab	17,481,189	1,521	1,510	2,016	2,890	4,406	4,310	2,394	1,349	666	471	737	1,458	23,728	1·36	1·46
Oudh	11,185,357	563	499	1,380	3,173	4,438	3,581	2,134	779	340	236	217	480	17,820	1·59	1·11
Central Provinces	7,266,373	242	349	576	679	622	562	338	258	162	71	134	179	4,172	·57	·20
Berar	2,184,945	316	496	788	1,047	1,413	1,464	948	575	404	199	208	511	8,369	3·8	·3
British Burmah	2.663,110	95	149	120	141	65	81	49	44	21	19	28	33	845	·32	·63
Madras	30,147,779	2,692	2,892	3,412	3,780	3,357	3,087	3,467	3.445	2,889	2,894	3,413	3,746	39,074	1·30	·68
Bombay	14,565,820	2.060	3,810	5,247	4,482	3,479	2,540	1,661	1,082	558	439	624	717	26,699	1·83	·66

---

* No returns received.

† Number of Deaths from Small-pox registered during that year

Malarial Fevers generally more prevalent than in 1871.

147. The fevers classed under the heads of intermittent, remittent, and continued, which are generally known as malarious, as has been already shown, caused by far the greatest number of admissions into hospital among the European troops. For the army of India as a whole the ratio was 472, out of a total of 1,497, but the proportion was very unequally divided, for, while in Bombay it amounted to 611, in Bengal it was 495, and in Madras 267 per 1,000. In 1871 the ratios were, for the army of India 529, for Bengal 590, for Madras 167, and for Bombay 691. In the army of India there was thus a decrease due to a decrease in both Bengal and Bombay; in Bombay, high as the admission rate for fevers was in 1872, it was not so high as in 1871. In Madras, as the figures above given show, fevers were much more prevalent in 1872 than in 1871: but the prevalence of 1872, 267 per 1,000, was little compared with 495 in Bengal. In Bengal the results of 1872, 495 cases per 1000, were more favorable than those of the ten-year period from 1860-69, in which they averaged 633. In 1870 they were 834, and in 1871 590. The mortality under this head was as usual very small, especially in proportion to the number of cases treated. As a whole, it was 1·38, varying from a maximum of 1·78 in Bengal to ·69 in Madras.

Their distribution by stations.

148. The monthly distribution of malarial fevers at the different stations of the three Presidencies is shown in Table XXVI. The proportion of cases in the several groups varies greatly. In the stations of British Burmah they were at a minimum, causing only 65 admissions into hospital per 1,000 of strength. In the hill stations of Bengal, some of which, however, were occupied for only part of the year and therefore yield a result somewhat more favorable than they otherwise would, the ratio was 115. In Southern India it was 165, and from this there are various gradations up to a maximum of 848. It is remarkable that this maximum is attained in the hill stations and Convalescent Depôts of Madras and Bombay. Mount Aboo and Puchmurree both give very high ratios of admissions from malarial fevers, and it is to the unfavorable results at these two places that the high proportion of cases of fever in this group is due.

Generally more prevalent among the people.

149. The mortuary statistics show that fevers were generally more fatal among the people in 1872 than in the previous year, as may be seen from the annexed summary. This was the case in the North-Western Provinces, the Punjab, Madras, and Bombay, and specially so in the Central Provinces and Berar.

Statement showing the Deaths registered from FEVERS *in the different Provinces during the year* 1872.

PROVINCES.	Estimated population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Deaths.	Ratio of deaths per 1,000.	Ratio for 1871.
Bengal*	... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	179,358†
North-Western Provinces	30,884,022	36,161	25,997	26,693	29,253	30,989	31,790	26,331	39,242	62,456	75,325	59,871	46,328	490,436	15·88	14·25
Punjab	17,481,189	15,146	12,667	13,169	11,827	15,553	15,859	11,229	17,862	43,836	45,019	37,416	25,128	264,711	15·14	12·21
Oudh	11,185,357	10,320	8,253	8,068	9,033	8,782	7,358	6,439	8,618	13,658	18,544	17,484	13,672	130,229	11·64	12·04
Central Provinces	7,266,373	8,775	7,306	8,572	9,050	9,904	11,366	8,942	*12,388	15,286	14,736	12,509	9,918	128,752	17·72	11·60
Berar	2,184,945	1,662	1,398	1,711	2,162	2,403	2,834	2,803	4,084	4,508	3,668	2,624	1,996	31,853	14·5	8·3
British Burmah	2,663,110	1,739	1,678	1,623	1,608	1,537	1,912	2,165	1,870	1,740	1,799	1,779	1,946	21,396	8·03	8·31
Madras	30,147,779	16,649	13,441	14,178	14,404	15,249	14,757	18,364	22,007	21,758	19,820	19,751	23,770	214,148	7·10	6·37
Bombay	14,565,820	16,504	15,081	16,345	15,880	14,489	14,802	16,498	19,452	18,326	18,458	22,810	18,102	206,747	14·19	11·85

* No Returns received.

† The number of Deaths from Fevers registered in 1871.

Enteric fever continued common.

150. Enteric or typhoid fever continues to occupy a prominent place among the diseases which contribute to the mortality of the European soldier in India. Of this affection 221 cases were treated throughout the army in 1872, compared with 207 in 1871, and 110 were fatal, compared with 92 in the year previous. The details regarding the distribution of this disease which are given in table XXV are of much interest and importance. As regards time, it is to be observed that they were spread over every month of the year. The maximum number of admissions, 35, was in September, and the minimum, 8, in November. They occurred at 48 different stations in the three Presidencies. The highest number in any one place was 35 at Secunderabad. There were 23 at Bangalore, 14 at Cannanore, and 10 at Rawul Pindee. Both these last-named stations were occupied by regiments fresh from England. At many of the other places the disease was confined to one or two isolated cases.

Especially among young soldiers.

151. The experience of another year fully bears out the remarks which were made on the subject of enteric fever among European soldiers in India in last annual report. There is no evidence that the disease was propagated by any specific contagion. The relation of age to mortality will be discussed in a subsequent para., but it may be remarked here with reference to typhoid fever, that, as usual the disease chiefly attacked young soldiers. The distribution of this fever according to age presents a very remarkable similarity in the three Presidencies, as may be seen from the following figures.

ENTERIC FEVER IN 1872.	DEATHS AT THE DIFFERENT AGES.				• DIED PER 1,000 OF STRENGTH.				RATIO OF LIABILITY IN PERCENTAGE.				TOTAL.
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	
Bengal	4	30	18	8	1·80	2·62	1·83	·62	26·20	38·14	26·64	9·02	100
Madras	3	17	6	1	3·66	4·94	2·00	·23	33·80	45·61	18·47	2·12	100
Bombay	3	13	5	4	3·00	3·18	1·90	1·21	32·19	34·12	20·39	13·30	100
India	10	60	29	13	2·48	3·16	1·88	·64	30·39	38·73	23·04	7·84	100

That the fever which proved so fatal to young soldiers was really typhoid is fully proved by the clinical observations of numerous medical officers. To extract from them would be merely to repeat the evidence which was so largely given in last annual report.

Epidemic of Dengue.

152. In last annual report mention was made of a remarkable epidemic of a peculiar form of fever under the name of dengue which commenced in Calcutta in the end of 1871, and continued very prevalent in that city during the first half of 1872. In the series of annual tables a special statement, No. XXIV, is devoted to show the prevalence of dengue among the European troops in each month and the distribution of the disease by stations and Provinces. Further information as regards its extent among the women and children is given in Nos. XIII and XIV of that series. In Lower Bengal the epidemic prevailed during the five months, April to August. There were 680 admissions at the three stations of Fort William, Dum-Dum, and Barrackpore, and the admission rate for this Province from dengue alone was 344 per 1,000. In the Gangetic Provinces and Oudh the epidemic commenced to show itself decidedly in July and continued to the end of the year, but three of the stations in this group, Hazareebaugh, Seetapore, and Futtehgurh escaped entirely. The admission-rate for the Province from this cause was 296. In the third group the disease was later in appearing, and its prevalence was confined chiefly to the months of September and October. Three of the stations escaped, and the ratio of cases was only 110 per 1,000. In the fourth group, Agra alone suffered, and in the fifth group, only Umballa. Above Umballa no cases were recorded among the European troops in this Presidency. In Madras and Bombay dengue contributed largely

to the sickness in many stations. It prevailed in all the groups except those comprising the hill stations.

Among the Native Troops and Prisoners.

153. Table No. XV of the Native troop series, shows the distribution of dengue in this section of the community. In many stations the sepoys suffered severely from the epidemic. At Alipore and Fort William, the cases exceeded 700, and at Benares they were over 800 per 1,000 of strength. The gradual decline in the violence of the epidemic as we proceed higher up to the north-west is shown here just as it is in the case of the European troops. The same remark applies to the jails. No separate dengue table has been given for them, but the number of admissions in each of those which were attacked is shown in the following abstract. It will be observed that the prisoners suffered in much smaller proportion than the troops. In many of the jails only one or two isolated cases occurred. :—

Table showing the prevalence of DENGUE *among the prisoners in the Bengal Presidency in each month of* 1872.

STATIONS.	Average Strength of the year.	ADMISSIONS IN EACH MONTH.										Total admissions of the year.
		March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Presidency	954	...	33	32	...	...	...	...	...	...	..	65
Alipore	2,403	...	11	32	52	50	23	18	...	...	...	186
Kishnagur	293	...	...	...	...	9	5	...	...	...	...	14
Moorshedabad	197	...	...	...	...	...	2	...	.	...	...	2
Howrah	29	1	...	1	3	1	8	5	...	...	...	19
Serampore	31	...	...	7	2	1	6	...	...	...	...	16
Hooghly	419	...	...	8	75	16	3	...	...	...	...	102
Raneegunge	17	...	...	...	...	..	...	...	1	...	...	1
Sooree	269	...	...	...	...	1	...	...	...	...	...	1
Maldah	82	...	...	...	...	1	16	...	...	...	...	17
Chittagong	238	...	...	...	...	42	66	3	...	...	...	111
Tipperah	233	...	...	...	...	...	...	5	3	1	...	9
Dacca	591	...	...	...	13	25	1	4	1	...	...	44
Sylhet...	416	...	...	...	...	...	7	3	1	...	...	11
Balasore	162	...	...	...	...	9	20	...	...	...	...	29
Cuttack	240	...	...	...	...	...	...	...	8	15	5	28
Pooree	93	...	...	...	...	...	...	1	47	2	...	50
Monghyr	299	...	...	...	...	3	...	...	...	...	...	3
Bhaugulpore (*District*) ...	420	...	...	...	...	...	...	3	1	...	...	4
Arrah...	421	...	...	...	...	...	1	...	...	...	...	1
Mirzapore	261	...	...	...	...	5	22	4	...	...	...	31
Lucknow (Cant.)	1,687	...	...	...	...	..	...	1	1	...	...	2
Cawnpore	365	...	...	...	...	...	...	22	26	4	...	52
Agra (Central)	1,339	...	...	...	...	...	67	215	21	...	...	303
Etah	254	...	...	...	1	...	...	...	...	...	...	1
Allyghur	470	...	...	...	...	...	...	12	1	...	...	13
Delhi	321	...	...	...	...	...	...	3	...	...	...	3
Rohtuck	198	...	...	...	...	...	...	...	3	...	...	3

Dengue among the general population.

154. Deaths from dengue are not shown separately in the statistics of the general population. They are included under the common head of fevers. Even had they been specially recorded, little idea could be formed from them of the wide-spread character of the epidemic, for the disease, although attended with much suffering, is not often fatal. The reports of the Sanitary Commissioners of Bengal and the Punjab for 1872 have not yet been received, but the reports from the other provinces in this presidency contain some interesting details. In the North-Western Provinces, Mirzapore, Benares, Ghazeepore, Allahabad, Jounpore, Cawnpore, Agra, Muttra, Allyghur and Meerut suffered much. In Banda there were 30 cases, but the existence of the disease is denied in the other districts, a statement which accords with the facts narrated regarding the troops. In some places three-fourths of the inhabitants are said to have been attacked, and the ordinary avocations of life were seriously interrupted. Dr. Planck remarks that "the history of this outbreak of disease will be found to lend strength to the belief in the highly contagious nature of the complaint." Several instances are given in which the commencement of the outbreak seemed to be traced to the arrival of some persons from an infected locality. At the same time, it is to be remarked, that the districts which escaped were all in free communication with those which suffered. It is worthy of notice that the area covered by the dengue epidemic in

North-Western Provinces.

the North-Western Provinces corresponded in great measure with that occupied by the cholera.

Oudh.

This remark, however, does not hold good of Oudh. Here cholera was generally distributed, but so far as is known dengue appeared only in the districts of Gonda, Rai Barielly and Lucknow. In the two first the cases were few, but in the city of Lucknow most of the inhabitants suffered.

Central Provinces.

In the Central Provinces, the only place in which dengue is mentioned as having been epidemic is Burhanpore. Here it raged during August, September and October, and one-half the population is said to have suffered from it. This was one of the districts which suffered from cholera. In Nimar, where cholera was most severe in these Provinces, both small-pox and fevers also attained their maximum, but that particular form of fever known as dengue does not appear to have prevailed. It is mentioned that "single cases of dengue were imported into other towns, but did not spread."

Berar.

The Sanitary Commissioner of Berar states that so far as he can ascertain, dengue did not prevail in that province. A few people along the line of rail were said to be suffering from it about the close of the rains, but as the disease did not spread he doubts very much if it were really dengue. As has been seen however in a former paragraph, isolated cases in jails were by no means uncommon. As regards dengue in the Punjab, I shall extract all the information furnished by the Officiating Sanitary Commissioner. Dr. Fairweather writes :—

Punjab.

> "The disease first appeared in Delhi on 1st June. The first case occurred in the child of a European family which had arrived from Calcutta three days before. Subsequent seizures were afterwards observed among persons who had been in communication with this family. The disease became generally epidemic about the end of July, and continued to prevail till the beginning of November. It was more or less prevalent all over the district. Dr. Taylor had no doubt of its infectious nature, and states that almost every one exposed to it caught the disease sooner or later, and that once in a house hardly a person in it escaped. He only saw one fatal case during the whole course of the epidemic."
>
> From Delhi it passed into Gurgaon, where slight outbreaks are stated by the Civil Surgeon to have taken place in the towns of Farakhnugar and Rewari. At Alwar, a Native State, a few imported cases occurred. After the rains, it prevailed extensively in the Hissar district into which it was said to have been imported from Delhi. The town of Bhiwani in this district suffered severely from it in October and November, the Sub-Assistant Surgeon there describing it as sparing neither age, sex nor *color*.
>
> In the Karnal district, the disease first made its appearance on 26th of August. The first case here was a man who had gone on business to Delhi, and who was attacked by it at Panipat on his way home. Dr. Cookson of Karnal says, that there were few houses in that town in which the disease did not make its appearance, but he adds that the disease was generally of a very mild type, and that "the eruption was decidedly uncommon."
>
> In Ambala, the disease is known to have been very prevalent, but the Civil Surgeon makes no mention of it whatever in his report.
>
> In Simla, two cases came under the observation of the Civil Surgeon, one of them imported from Meerut and the other from Calcutta.
>
> The disease also spread as far as Ludianah, where I saw several cases when I was there in the middle of November. The Sub-Assistant Surgeon there told me it had been prevalent in the district for some time, but to what extent I am unable to say, as the Civil Surgeon makes no allusion to the disease in his annual report.
>
> Whether the disease made its appearance to any extent in the districts bordering on Ludianah, namely, Ferozepore and Jalandhur, I cannot say, but there is no word of it in the reports of the Civil Surgeons of either of these districts.
>
> Isolated cases occurred at Lahore and other parts throughout the country, but they were in nearly every case traced to importation, and no outbreak of the disease followed.

Without much more detailed information it is impossible to decide how far the evidence can be held to prove importation and spread by contagion.

The Sanitary Commissioner of British Burmah remarks :—

British Burmah.

"Dengue fever, which had prevailed in the north of India and Bombay during the beginning of 1872, was imported into Burmah in the month of March. The first case occurred on the 11th of that month, the subject of it had just returned in one of the mail steamers from Calcutta where the fever was at that time. It attacked about 70 per cent. of the inhabitants of Rangoon, and was so prevalent at one time as to obstruct business considerably; it spread from Rangoon to Prome and thence to Thayetmyo, having passed over the towns and country between Rangoon and Prome; it subsequently went down the Irrawaddy, Henzadah was attacked on the 4th May, Moulmein on the 10th from Rangoon. It made its appearance at Bassein on the 20th May; the disease was brought there on board a ship direct from Bombay. Shwegyeen on the Sillang river, and the remote station of Toungboo higher up, were the next places in which it appeared. Tavoy, to the south of Moulmein, was next visited on the 28th June; and Mergui subsequently. It appeared very late in Arracan; at Akyab in the end of June, at Kyowuk Phyoo in August; at the town of Ramree 26th October, and did not make its appearance at the island of Cheduba until the beginning of the present year. The isolated district of Sandoway was not attacked by it until the month of May 1873. In every place its commencement was traced to importation from outside, the rapidity of its spread depending on the slowness or quickness of the ordinary means of communication and the frequency of such communication. Thus its spread from the north to the south of Arracan was very slow, in consequence of the slight inter-communication between villages there, and the thin and scattered population.* The disease was well known to old people in Burmah who recollected an epidemic of it in 1823, which, from accounts of it preserved, must have been of a severer type than the last visitation. It was so severe in Rangoon, and prevailed so extensively that it was called Rangoon fever by European medical writers. The late epidemic caused very few deaths; one or two children died from convulsions, and one adult from supervening jaundice. Several cases of jaundice following on the fever were reported."

Apoplexy very prevalent.

155. Throughout the Army of India there were 268 cases of apoplexy of which 114 were fatal. All but 34 of the cases occurred in the six months, April to September. The greatest number in any one month, 112, took place in June. The proportion in the three Presidencies was much the same, 4·3 in Bengal, 4·8 in Madras, and 5·1 in Bombay. The death-rate from this disease was highest in Bombay, 2·59; in Madras it was 2·43, and in Bengal 1·59. Turning to Table XXVII, the distribution of the disease in each month may be traced according to stations and provinces. Its wide-spread prevalence in the month of June is very marked. The statistics under this head in 1872 are very unfavorable. In 1871 only 125 soldiers were attacked with this affection and 47 died of it, or less than one-half the numbers in the past year. And it is worthy of notice that this marked difference obtained in all three Presidencies. In Bengal, in 1872, there were 157 attacks compared with 64 in 1871; in Madras 56 compared with 24; and in Bombay 55 compared with 37. The increased prevalence in this presidency might be hastily ascribed to exposure in cholera camps, but no such cause was at work in Madras, where the contrast between the results in the two years is most marked. The death-rate from apoplexy in Bengal, 1·59 per 1,000, is nearly double what it was in 1871—·80 per 1,000. In 1870 it was 1·62. During the ten-year period 1860-69, it averaged 2·19 per annum.

Dysentery and Diarrhœa more prevalent than in 1871.

156. Dysentery and diarrhœa were also both more prevalent and more fatal in 1872 than in 1871. From dysentery the admissions equalled 44 per 1,000 in the Army of India compared with 39, due to a considerable rise both in Madras and Bombay. The death-rate for the Army as a whole was 1·85—in 1871 it was 1·34—a difference due to an increase in all three presidencies. Under the head of diarrhœa, the admissions rose from 62 in 1871 to 74; in 1872 this rise was also general. The death-rate, ·17 though small, was higher than in the year previous, when it stood at ·12. The admissions from dysentery in Bengal were 35 per 1,000, the ratio in 1871 having been 34; the deaths were 1·75 compared with 1·17. In 1870 the ratios stood at 37 and 2·07. The average for the ten-year period is for admissions 48, and for deaths 2·72.

Bowel complaints generally more fatal among the people.

157. The statistics of deaths among the people which were ascribed to bowel complaints cannot be relied on as by any means accurate, for in addition to the ordinary imperfections which still attend on mortuary registration, there is the difficulty of distinguishing the deaths which ought properly to be recorded under this head. The annexed Tabular Statement in which the returns from the different Provinces are summarized, shows that in many of them bowel complaints were much more fatal than in 1871.

---

* The details given in the district Sanitary Reports of British Burmah by no means supply evidence sufficient to prove that the dengue was spread altogether or even mainly by contagion. J. M. C.

Statement showing the deaths registered from BOWEL COMPLAINTS *in the different Provinces during the year* 1872.

PROVINCES.	Population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Deaths.	Ratio of deaths per 1,000.	Ratio for 1871.
Bengal*	... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17,728†
North-Western Provinces... ...	30,884,022	4,154	3,279	3,646	4,469	4,879	5,229	5,184	8,096	9,615	8,894	6,784	5,265	69,494	2·25	1·95
Punjab	17,481,189	1,185	872	973	1,562	2,521	1,830	1,606	2,833	3,348	2,781	2,314	1,520	23,345	1·33	1·24
Oudh	11,185,357	541	360	413	495	633	476	523	533	550	698	443	338	6,003	·54	·86
Central Provinces	7,266,373	939	886	1,190	1,193	1,304	1,316	1,748	2,675	2,719	2,045	1,498	1,281	18,794	2·59	1·60
Berar	2,184,945	747	662	773	959	1,128	1,461	2,215	4,651	4,544	2,435	1,359	1,027	21,961	10·1	4·2
British Burmah	2,663,110	368	327	370	338	387	508	617	467	475	259	279	309	4,804	1·80	2·30
Madras Presidency	30,147,779	3,507	2,920	2,686	2,674	2,749	3,033	3,701	3,992	3,760	3,533	3,289	3,543	39,387	1·31	1·28
Bombay Presidency	14,565,820	2,355	2,078	2,123	2,075	2,305	2,658	3,696	4,881	3,898	3,045	2,523	2,027	33,664	2·31	2·15

* No Returns received.

† Number of deaths from Bowel Complaints registered in 1871.

Delirium tremens less prevalent.

158. Of delirium tremens 245 cases were treated in 1872, of which 11 were fatal, rêndering ratios of 4·2 and ·19 per 1,000. No great difference obtains in the different presidencies. In Madras there was a maximum of 4·7 cases per 1,000. In Bombay they equalled 4·1, and in Bengal 4. In Madras also the mortality was highest, ·35, compared with ·19 in Bombay and ·14 in Bengal. Delirium tremens was less prevalent in 1872 than in 1871, in which year the cases numbered 290 and the deaths 22. In that year also Madras gave the most unfavourable return.

Hepatitis

159. The proportion of cases of sickness and deaths due to hepatitis does not call for any special remarks. As a whole, the disease was somewhat less frequent than in 1871, and the death rate lower, but there is no great difference between the two years either in the army of India as a whole or in that of the three Presidencies taken separately.

	1872.		1871.	
	PER 1,000 OF AVERAGE STRENGTH.			
	Admissions	Deaths.	Admissions.	Deaths.
Bengal Presidency	56	2·36	59·7	2·73
Madras	59·3	3·29	66·5	3·59
Bombay	34·9	1·85	44·5	1·85
Army of India	52·8	2·45	58·1	2·73

Venereal Diseases.
Number of lock hospitals.

160. In 45 of the 56 places in this presidency occupied by British soldiers, measures were taken for the prevention of venereal disease. As a rule, one lock hospital is provided for each, but there are a few exceptions. At Darjeeling, for example, there is one for the small station and depôt taken together, and at the Fort of Gwalior the arrangements are part of the system at the neighbouring cantonment of Morar. At Lucknow, on the other hand, there are two separate lock hospitals, one in the large city and the other in cantonments. The same system is still kept up at Jullunder, but it has been abolished at Ferozepore. During 1872, lock hospitals were established at Nowshera, Dalhousie, Subathoo and Nynee Tal, and one at Darjeeling which had been closed for some months was also re-opened.

Stations at which there are no lock hospitals.

161. There are still 11 stations occupied by European troops where there is no lock hospital. They are either places in which troops are located for only a portion of the year, as at Murree and Landour, or those in which the force is small, as at Dera Ismail Khan and Jutog. The strength and the ratio of admissions from veneral diseases in each of them in 1872 as compared with 1871 were as follows :—

STATIONS.	Average strength in 1872.	Admissions from venereal diseases per 1,000.	
		1872.	1871.
Chunar ...	66	151	338
Futtehgurh ...	215	111	214
Umritsur ...	273	219	546
Campbellpore ...	135	44	45
Dhurmsalla ...	88	11	107
Kangra ...	30	... ...	... ...
Landour ...	205	122	230
Dera Ismail Khan ...	99	181	150
Jutog ...	95	94	45
Murree Hills (5 months)	668	89	83
Murree Depôt ...	526	169	118

Omitting Kangra, where the small strength and short period of occupation would both vitiate any comparison, and where, moreover, there was no European garrison in 1871, there are six places out of the above list in which venereal affections showed a decrease over the results of the year previous. There were four on the contrary in which the reverse was the case. Making allowance for all sources of error, the experience of these stations, as well as that of the cantonments generally before the rules were applied to them, shows that the proportion of admissions from this particular class of diseases, apart from the effect of any preventive measures is liable to very great fluctuations. It may be mentioned that a second class lock hospital has lately been sanctioned for Murree, in which no preventive measures were in force in 1872, and that the military outposts on the Murree and Abbottabad road have been included in the rules.

Stations under the rules in which cases of venereal affections increased in 1872.

162. Taking the stations at which lock hospitals have been in operation, there are 17 in which the results of 1872 compare unfavorably with those of 1871. It is remarkable that among these should appear both Nowshera and Dalhousie, where, as has been already stated, lock hospitals were established in 1872. In both of them the admissions from venereal affections largely increased during the past year.

Stations showing increase in the ratio of admissions from Venereal disease per 1,000 *of European soldiers in* 1872 *over* 1871.

Stations.	1871.	1872.
Fort William	206	285
Barrackpore	99	108
Bareilly	198	228
Gwalior citadel	87	121
Saugor	149	153
Umballa	162	241
Jullundur	123	167
Mooltan	104	143
Sealkote	163	166
Mean Meer	183	189
Nowshera	166	215
Peshawur	123	228
Raneekhet	288	300
Chuckrata	103	130
Darjeeling depôt	60	76
Kussowlie	95	170
Dalhousie	96	251

Stations under the rules in which they decreased in 1872.

163. In 28 stations, on the other hand, venereal admissions in 1872 show a smaller proportion than they did in 1871, and in many of them the reduction is very satisfactory. This is particularly the case as regards several of those in Bengal Proper—Dum-Dum, Hazareebaugh, and Dinapore. Seetapore, Shajehanpore, Jhansie, and Jubbulpore may also be cited as showing a marked improvement. At Nynee Tal, coincident with the introduction of the rules, venereal cases among the troops have fallen from 311 to 107 per 1,000; and at Subathoo, where preventive measures were introduced from the 1st March, there has also been a decided decrease from 133 in 1871 to 72 in 1872.

Stations showing decrease in the ratio of admissions from Venereal disease per 1,000 *of European soldiers in* 1872 *over* 1871.

Stations.	1871.	1872.
Dum-Dum	135	123
Hazareebaugh	384	241
Dinapore	320	182
Benares	321	306
Fyzabad	209	206
Lucknow	266	227
Seetapore	133	88
Cawnpore	500	442
Allahabad	179	163
Shahjehanpore	265	84
Mooradabad	259	180
Roorkee	177	173
Meerut	125	122
Delhi	308	195
Muttra	208	159
Agra	266	213
Morar	174	149
Jhansie	209	77
Nowgong	236	146
Jubbulpore	291	82
Ferozepore	219	163
Fort Lahore	108	97
Rawul Pindee	207	184
Attock	216	172
Darjeeling	303	153
Dugshaie	285	123
Subathoo	133	72
Nynee Tal	311	107

These statistics not an accurate test of local extent of disease.

164. But as has been pointed out in previous reports, these statistics of individual stations do not fairly indicate the exact amount of venereal disease which is to be attributed to each, and they cannot therefore be regarded as an accurate test of the

amount of success or failure with which the different lock hospitals have been worked. In many cases the venereal affections treated in one place have been contracted elsewhere, either at some other station, or as is very common, on the march, where the facilities are exceptionally great. Again, the classes of venereal disease are not distinguished according to stations. The annual statistics shew merely that so many cases have been treated in each garrison during the year; but in judging of the results of the lock hospital it is no doubt important to separate the admissions from primary syphilis, gonorrhœa, secondary syphilis, and other venereal affections.

More detailed statistics desirable for each station.

165. Such a detailed statement could be prepared in the Statistical Branch of this office according to regiments, and this information is to a great extent already given in the regimental tables; but as a record of local events it would be incomplete, for not only are regiments often divided, but in regard to the number of cases actually contracted in any place no information is given, nor could it well be given in the weekly returns from which the statistics are compiled. It is desirable, however, that this point should engage the attention of medical officers in charge of lock hospitals. They already receive weekly returns of the extent of venereal disease among the European troops. By modifying this form, all the necessary information would be available for the preparation of an annual statement giving full details regarding the number of admissions from each variety of venereal disease, and how much of it is rightly to be attributed to the particular station concerned.

Efficiency of the system to be judged by the statistics of the army as a whole.

166. But while it is very desirable that the medical officer in charge of the lock hospital and all other authorities concerned should be in possession of such data, too much importance must not be attached to them, nor must it be inferred that for want of such statistics it has hitherto been impossible to estimate the amount of success which has attended the working of the preventive measures. Some medical officers appear to be under the impression that if the amount of disease actually contracted at a station is small, the object in view has been gained; others again seem to think that so long as the men are not diseased by the women who are subjected to periodical examination, the institution may be regarded as a success. But this is a very narrow view of the subject. The practical question to be answered is this—what is the extent of venereal diseases among the troops, and in what degree have they been diminished by the lock hospitals?

Venereal diseases in the European army of Bengal in 1872. Some improvement.

167. The statements already given shew that in many stations good appears to have been done, and that with increased vigilance on the part of the authorities, the amount of disease has been materially reduced during the past year. Others again shew unfavorable results. The statistics of the army in the Bengal Presidency, however, during 1872 indicate some improvement; the admissions per 1,000 equalled 190, compared with 208 in 1871. These are the ratios as taken from the general tables, and they are more complete than the regimental returns, which do not include regiments present only for short periods of the year. The details of these, however, afford important particulars which are not given in the general tables. The figures for 1871 and 1872 which they contain stand thus:—

VENEREAL DISEASES.	1871.		1872.	
	STRENGTH 35,071.		STRENGTH 36,591.	
	Admissions into hospital.	Ratio per 1,000.	Admissions into hospital.	Ratio per 1,000.
Primary Syphilis	2,572	73·3	2,266	61·9
Gonorrhœa	3,371	96·1	3,194	87·2
Phymosis	23	10·8	39	10·0
Stricture	134		152	
Warts	104		74	
Orchitis, Gonorrhœal	119		112	
TOTAL ...	6,323	180·2	5,837	159·1
Secondary Syphilis	849	24·2	830	22·6
Inflammation of the inguinal glands	630	32·3	521	27·2
Orchitis	503		476	

In 1870, the admissions from primary syphilis and venereal affections other than secondary syphilis were in the proportion of 172 per 1,000. Those from secondary syphilis 24 per 1,000. The comparison of 1872 with these results and with those of 1871 is satisfactory. Under every head there is a reduction. Primary syphilis has fallen from 73·3 to 61·9. Gonorrhœa from 96·1 to 87·2. Other affections from 10·8 to 10·0, and the whole admissions from the diseases classed together in this group have declined from 180·2 to 159·1. In secondary syphilitic affections, and also in the other diseases noted which are in great part of venereal origin, there is also a reduction.

Statistics of Madras and Bombay.

168. Although I am dealing now only with the reports of the lock hospitals in this Presidency, it will not be out of place to glance at the results in Madras and Bombay also, as shown by the regimental tables:—

VENEREAL DISEASES.*	MADRAS.		BOMBAY.	
	STRENGTH 11,369.		STRENGTH 10,734.	
	Admissions into hospital.	Ratio per 1,000.	Admissions into hospital.	Ratio per 1,000.
Primary Syphilis	743	65·4	584	54·4
Gonorrhœa	700	61·5	813	75·7
Phymosis	12	7·2	9	6·7
Stricture	30		20	
Warts	21		10	
Orchitis, Gonorrhœal	19		33	
TOTAL ...	1,525	134·1	1,469	136·8
Secondary Syphilis	333	29·2	151	14·0
Inflammation of the inguinal glands	314	37·1	191	25·6
Orchitis	108		84	

The returns from Madras and Bombay yield nearly the same ratio for venereal affections as a whole, but primary syphilis was more prevalent in Madras than in Bombay. Both are more favorable than those of Bengal. The ratios of cases per 1,000 taken from the general tables are as follows:— Bengal 190, Madras 164, Bombay 154.

Compared with those of home stations.

169. The report of the Army Medical Department for 1870, the last which has been received, shows that in 14 stations of the United Kingdom in which the Contagious Diseases Act was in operation during the whole or very nearly the whole of the year, the cases of primary venereal sores per 1,000 of mean strength varied between 30 and 152. The average of the 14 is 65. In 14 other stations in which the Act was not in operation the proportion fluctuated between 43 and 160, the average being 90. Tried by this standard, the prevalence of

venereal disease among British troops in India is not so great as might be expected; for the ratio of admissions from primary syphilis in the Bengal and Bombay Presidencies during 1872 was less, and that in Madras no greater, than the ratio of admissions for 1870 in those stations of the United Kingdom in which the Act was in force.

Rules well suited for the purpose intended.

170. The general results during 1872, though by no means so successful as could be desired, thus afford ground for the belief that the lock hospitals have done good, and that as they are more thoroughly worked a decided impression will be made on this class of diseases, which so materially interferes with the efficiency of the British soldier. How is this greater efficiency to be attained? The rules as they now stand are well adapted for the purpose, and I do not see in what respect they can be improved. Of the many authorities who are concerned in their working, and who have had an opportunity of recording their opinions, not one has suggested any material alterations. But their proper application requires never-flagging exertions on the part of both the civil and military authorities.

Relation of disease among the women and the men.

171. In order to test the actual effect of the preventive measures, it is very desirable that the nature and extent of venereal affections among the women should be compared with their nature and extent among the men, so that it may be seen whether any relation can be established between the two. At Jubbulpore, in 1872, although the working of the lock hospital was singularly successful, it is particularly mentioned that the diseases from which the men were admitted into hospital were not of the same class as those from which the prostitutes were suffering. The Army Sanitary Commission recommended* that an enquiry of this nature should be instituted; and although I believe that the lock hospitals have not yet arrived at that degree of efficiency under which any very satisfactory results could be expected from such an enquiry, that, in fact, the women from whom the men contract disease have, as yet, been brought under supervision but to a small extent, it is very necessary for ensuring further success that this question should be kept in view by the medical officers and by the other authorities, and that it should receive attention in the annual report.

Deaths according to age.

172. The proportion of mortality due to the chief diseases at the different quinquennial periods of life from under 20 to 30 and upwards, as observed in each of the three Presidencies, is shown in the following extracts from Dr. Bryden's more detailed tables contained in his memorandum which is given in the appendix. To this paper, which continues his investigation into the relation of age and length of service to the mortality and invaliding among European soldiers in India and discusses many points intimately connected with this most important question, I would call special attention.

---

* Memorandum on military lock hospitals in Madras in 1869.

Statement shewing the mortality from different causes, at different periods of life, among European Soldiers in the three Presidencies of India during 1872.

PERIODS OF LIFE— STRENGTH AT EACH.	BENGAL.				MADRAS.				BOMBAY.			
	Under 20, 2,220.	20 to 24, 11,453.	25 to 29, 9,829.	30 and over, 12,847.	Under 20, 820.	20 to 24, 3,440.	25 to 29, 3,000.	30 and over, 4,226	Under 20, 1,002.	20 to 24, 4,083.	25 to 29, 2,625.	30 and over, 3,232.
Causes of death.	Died per 1,000 of strength.				Died per 1,000 of strength.				Died per 1,000 of strength.			
Cholera	1·80	9·96	10·79	12·92	...	·30	...	·23	...	4·65	2·67	3·09
Remittent and continued fevers	·45	1·66	1·32	2·33	1·22	1·45	·33	·23	...	·73	1·14	·62
Enteric fever	1·80	2·62	1·83	·62	3·66	4·94	2·00	·23	3·00	3·18	1·90	1·24
Apoplexy	·45	1·05	1·02	2·65	...	1·45	1·67	4·26	...	·49	2·67	5·88
Delirium tremens	...	...	·10	·31	...	...	·33	·71	...	...	...	·62
Dysentery and diarrhœa	...	1·13	2·14	2·96	...	1·45	2·67	4·50	...	1·23	1·53	1·24
Hepatitis	·45	1·05	2·85	3·58	1·22	2·33	2·00	5·45	...	·98	1·53	3·72
Phthisis pulmonalis	·90	·44	·81	1·79	1·22	1·16	1·00	2·60	...	1·47	1·14	2·78
Heart disease	...	·26	·31	2·65	...	·30	·33	5·21	...	...	...	3·09
All other causes	·90	3·05	4·37	8·41	2·44	2·62	2·34	4·50	1·00	3·68	3·80	5·26
ALL CAUSES	6·75	21·22	25·54	38·22	9·76	16·00	12·67	27·92	4·00	16·41	16·38	27·54
ALL CAUSES, EXCLUDING CHOLERA	4·95	11·26	14·75	25·30	9·76	15·70	12·67	27·69	4·00	11·76	13·71	24·45

For the army as a whole the percentages of liability to deaths from all causes at the different periods stand thus:—Under 20 years, 8·17: 20—24 years, 23·51: 25—29 years, 26·28: 30 years and upwards 42·04.

Number of married and unmarried soldiers in the three Presidencies.

173. The proportion between the numbers of married and unmarried soldiers in 1872 remained very much as it was in 1871. The details for 1872 are shown in the following statement:—

Abstract of married and unmarried European Non-Commissioned Officers and Soldiers serving in the three Presidencies on the 1st May 1872.

Corps.	Staff Serjeants				Serjeants.				Rank and File.				Total of all Grades.			Remarks.
	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Establishment in India.	Married.	Unmarried.	Percentage of married to actual strength.	Married.	Unmarried.	Percentage of married to actual strength.	
Engineers.																
Bengal ...	3	2	1	66·66	24	12	19	38·70	48	2	6	25.	16	26	38·09	
Madras ...	2	3	...	100·	20	13	3	81·25	40	1	4	20.	17	7	70·83	
Bombay ...	2	2	...	100·	4	2	1	66·66	8	7	2	77·77	11	3	78·57	
Total ...	7	7	1	87·5	48	27	23	54·	96	10	12	45·45	44	36	55·	
Artillery.																
Bengal ...	141	102	30	77·27	277	151	131	53·54	6153	515	5,298	8·85	768	5,459	12·33	
Madras ...	65	56	10	84·84	106	66	28	70·21	2511	316	2,275	12·16	437	2,313	15·89	
Bombay ...	55	40	13	75·47	96	57	36	61·29	2064	226	1,947	10·40	323	1,996	13·92	
Total ...	261	198	53	78·88	479	274	195	58·42	1,0728	1,056	9,520	9·98	1,528	9,768	13·52	
Cavalry.																
Bengal ...	50	35	18	66·03	165	59	54	52·21	2,075	160	1,864	7·90	251	1,936	11·59	
Madras ..	20	13	8	61·90	50	22	25	46·80	840	101	767	11·63	136	800	14·52	
Bombay ..	24	18	4	81·81	60	36	26	58·06	829	84	785	9·66	138	815	14·48	
Total ...	94	66	30	68·75	265	117	105	52·70	3,744	345	3,416	9·17	528	3,551	12·94	
Infantry.																
Bengal ...	288	166	83	66·66	1,280	569	656	46·44	26,796	2,167	24,968	7·98	2,902	25,707	10·14	
Madras ...	72	49	27	64·47	369	202	154	56·74	7,524	670	6,983	8·75	921	7,164	11·39	
Bombay ...	90	70	19	78·65	360	176	163	51·91	7,624	619	6,759	8·38	865	6,941	11·08	
Total ...	450	285	129	68·84	2,009	947	973	49·32	41,844	3,456	38,710	8·12	4,688	39,812	10·53	
Total of all Arms																
Bengal ...	482	305	132	69·79	1,736	791	860	47·91	35,072	2,844	32,136	8·13	3,940	33,128	10·62	
Madras ...	159	121	45	72·89	545	303	210	59·06	10,915	1,087	10,029	9·77	1,511	10,284	12·81	
Bombay ...	171	130	36	78·30	520	271	226	54·52	10,425	936	9,493	8·97	1,337	9,755	12·05	
Grand Total of all Arms in the 3 Presidencies ...	812	556	213	72·30	2,801	1,365	1,296	51·29	56,412	4,867	51,658	8·61	6,788	53,167	11·32	

Comparative sickness and mortality among the married and unmarried.

174. The annexed statements shew the causes of admissions into hospital and of deaths among the married as compared with the unmarried men in each presidency during 1872, and the results of previous years are also given. As the facts only bear out what has been said on this subject in former reports they require no comment.

Summary of the Returns of 1872 *from the Bengal Presidency for married and unmarried Soldiers, showing also the Parallel Statements for* 1871, 1870, 1869, 1868, *and* 1867.

[AN APPROXIMATE STATEMENT.]

	Year.	Average strength.	Total number of days spent in Hospital during the year.	Average number of days spent in Hospital by each man.	Admission rate of the year per cent. of strength.	DETAILS OF STRENGTH ACCORDING TO AGE. Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	DETAILS OF DEATHS ACCORDING TO AGE. Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	TOTAL ADMISSIONS AND DEATHS DURING THE YEAR.		CAUSES OF ADMISSIONS AND DEATHS. Cholera.	Fevers.	Apoplexy.	Drunkenness.	Delirium Tremens.	Dysentery and Diarrhœa.	Hepatitis.	Venereal Affections.	Heart Disease.	Phthisis Pulmonalis.	Disease of Lungs.	Ophthalmia.	Scurvy.	Accidents and Injuries.	Suicide.	All other Causes.
Total for Married Men	1872	3,803	35,628	9·4	87	...	64	694	1,576	1,228	246	...	...	13	50	45	12	Admitted	32,94	70	1,360	14	16	22	219	179	17	50	31	152	167	..	143	..	854
																		Died	120	52	8	10	...	...	5	7	...	5	6	7	..	...	2	2	16
	1871	3,620	32,541	9	76	...	43	827	1,697	890	163	...	2	10	33	27	7	Admitted	2,754	4	1,083	8	13	29	195	141	21	31	38	159	154	...	160	...	718
																		Died	79	2	10	7	...	4	4	15	...	11	8	4	..	...	3	1	10
	1870	3,440	30,482	8·9	81	...	76	830	1,435	981	168	...	...	9	29	39	9	Admitted	2,776	6	1,290	9	28	33	181	118	11	29	29	126	150	..	137	1	623
																		Died	86	3	10	7	...	2	7	10	...	6	11	2	...	...	2	2	24
	1869	3,450	32,596	9·5	89	...	115	1,002	1,470	732	131	...	3	26	75	51	11	Admitted	3,078	57	1,337	38	22	46	255	114	6	33	29	112	144	...	181	..	704
																		Died	166	49	15	21	1	8	12	19	...	9	9	5	..	..	1	4	13
	1868	3,351	26,825	8	78	...	148	987	1,418	662	136	...	1	18	40	20	9	Admitted	2,613	15	823	4	106	30	262	145	15	16	17	77	158	..	181	1	787
																		Died	88	9	3	21	1	8	8	10	...	6	7	2	...	..	1	1	11
	1867	3,012	27,146	9	88	1	128	835	1,331	582	135	...	1	31	40	26	12	Admitted	2,642	64	804	19	83	19	291	97	12	32	25	107	132	4	170	1	729
																		Died	110	52	6	9	1	4	6	3	...	3	8	3	...	..	2	2	11
Total for Unmarried Men	1872	32,734	703,514	21·5	157	1,749	11,498	9,203	6,863	2,909	522	13	244	241	222	122	38	Admitted	51,232	520	20,386	85	102	123	3,812	1,738	6,459	645	307	1,847	665	17	2,901	5	11,620
																		Died	880	336	115	44	2	4	59	68	1	35	27	41	...	1	23	20	104
	1871	32,178	684,185	21·3	153	2,664	10,734	9,078	6,721	2,619	362	29	118	132	153	82	16	Admitted	49,182	37	19,480	37	147	108	3,169	1,918	6,733	559	286	1,915	551	7	2,866	4	11,385
																		Died	530	23	126	19	3	3	28	64	2	46	43	39	...	...	25	17	92
	1870	31,169	713,128	22·9	175	2,072	10,083	9,143	7,137	2,325	409	20	163	177	195	69	24	Admitted	54,535	47	26,389	71	199	154	3,153	1,776	6,426	479	304	1,660	576	22	2,702	1	10,578
																		Died	648	19	131	37	2	6	56	107	7	46	38	56	...	...	24	13	108
	1869	30,728	675,810	22	178	2,188	8,915	9,787	6,992	2,514	332	38	370	405	331	122	35	Admitted	54,694	780	23,784	203	212	182	4,697	1,650	6,341	410	339	1,418	614	25	2,828	14	11,198
																		Died	1,301	484	169	94	...	10	113	125	4	42	62	23	...	...	23	16	131
	1868	30,336	561,707	18·5	139	1,762	9,176	10,843	6,241	1,949	365	27	140	183	147	56	10	Admitted	42,158	57	13,830	221	638	107	3,443	1,465	6,064	321	223	1,396	628	23	3,021	4	10,718
																		Died	568	41	99	70	6	3	57	87	4	29	41	24	...	3	17	14	73
	1867	30,862	567,739	18·4	133	1,293	6,998	13,815	6,310	2,181	315	25	212	327	218	78	8	Admitted	42,634	551	13,670	122	572	104	3,952	1,702	5,227	351	204	1,307	736	24	2,952	11	11,149
																		Died	868	370	77	47	8	10	82	76	2	30	36	29	...	1	21	10	69

Summary of the Returns of 1872 *from the Madras and Bombay Presidencies for married and unmarried Soldiers, showing also the Parallel Statements for* 1871.

		Year.	Average Strength.	Total number of days spent in Hospital during the year.	Average number of days spent in Hospital by each man.	Admission rate of the year per cent. of strength.	Details of Strength according to Age.						Detail of Deaths according to Age.						Total Admissions and Deaths during the year.		Causes of Admissions and Deaths.															
							Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.			Cholera.	Fevers.	Apoplexy.	Drunkenness.	Delirium Tremens.	Dysentery and Diarrhœa.	Hepatitis.	Venereal affections.	Heart diseases.	Phthisis Pulmonalis.	Disease of Lungs.	Ophthalmia.	Scurvy.	Accident and injuries.	Suicide.	All other causes.
Madras	Total for Married Men ...	1872	1,439	12,472	8·7	78	...	22	259	618	457	83	...	2	1	9	9	9	Admitted	1,129	1	393	6	38	6	92	51	6	21	12	27	41	.	87	...	348
																			Died	30	...	2	5	..	1	4	3	1	6	4	..	..	...	1	1	2
		1871	1,355	12,000	9	68	...	14	243	645	377	76	...	...	3	14	15	5	Admitted	930	5	126	2	53	20	115	60	7	28	21	29	42	..	84	...	338
																			Died	37	2	2	3	..	4	5	6	1	7	2	..	.	..	2	2	1
	Total for Unmarried Men ...	1872	9,795	223,829	22·9	141	613	3,153	2,967	2,097	901	154	6	45	37	48	24	11	Admitted	13,718	2	3,368	29	281	46	1,640	550	1,723	128	106	254	176	7	1,064	...	4,419
																			Died	171	2	29	19		3	23	27	3	12	11	..	..	..	4	1	37
		1871	8,927	195,696	21·9	125	1,038	2,772	2,403	1,814	771	129	6	29	40	63	22	3	Admitted	11,203	71	1,296	16	264	75	1,252	619	1,643	157	103	357	112	2	1,061	2	4,124
																			Died	163	34	24	5	...	1	16	30	..	15	8	6	...	...	8	6	10
Bombay	Total for Married Men ...	1872	1,294	9,780	7·6	80	...	26	232	514	447	75	...	..	2	12	7	1	Admitted	1,033	3	622	8	4	10	51	29	4	2	8	21	11	...	62	...	198
																			Died	22	2	3	4	..	...	1	2	..	...	3	...	...	..	..	...	7
		1871	1,259	9,953	7·9	87	2	31	248	519	364	95	..	...	3	5	10	...	Admitted	1,095	...	482	2	8	14	79	36	8	8	8	43	42	1	88	...	276
																			Died	18	...	4	...	...	2	..	3	..	3	1	2	...	...	...	...	3
	Total for Unmarried Men ...	1872	9,742	181,131	19	161	1,073	4,010	2,343	1,438	737	141	9	64	39	35	25	6	Admitted	15,731	41	8,356	36	27	36	960	309	1,593	82	88	336	176	2	728	3	2,958
																			Died	178	33	32	19		..	13	18	2	9	15	5	...	1	5	7	24
		1871	9,785	198,455	20	154	1,405	3,677	2,483	1,514	578	128	7	37	32	29	21	4	Admitted	15,072	1	7,205	18	32	55	795	426	1,801	139	83	373	206	1	845	1	3,090
																			Died	130	..	22	9	1	3	12	18	..	9	13	2	...	..	7	6	28

Extent of intemperate habits.

175. From Madras no return showing the extent of intemperate habits among the European troops in that Presidency has been received. In Bengal and Bombay, as shown in the returns, cases of drunkenness continued to be very numerous. In the former the total is 11,779 compared with 11,750 in 1871: in the latter 4,552 compared with 4,643. In the Cavalry Regiments they vary from a minimum of 37 to a maximum of 258. In the Batteries from 6 in one to 136 in another of very nearly the same strength. In one Infantry Regiment the cases of drunkenness are returned as only 16; in another they are 801. These marked differences deserve attention.

Principle on which the invaliding has been calculated.

176. The system on which the invaliding is calculated was fully explained in last Annual Report, and the reasons were there set forth which rendered the adoption of this system essential for the proper preparation of the statistics; but as the matter has not been thoroughly understood, and as it has been necessary to return the great mass of the gain and loss statements for alteration, causing much delay in the compilation of the Annual Tables and the issue of this Report, I may explain again more clearly what is the object in view. The principle aimed at is simply this, that the invaliding, as well as the sickness and mortality should, as far as possible, be shewn in the statistics of the year to which it really belongs. In certain years, causes of disease are more active than in other years, and manifest themselves, *first* in a high ratio of admissions into hospital, *secondly* in unuusal mortality, and *thirdly* in increased invaliding. In recording the sanitary history of the year, it is clearly desirable that these three series of facts should all be taken; but if the last is separated from the other two and thrown into the next year, it will certainly not be considered in its right place, and its relation to the previous year in all probability may be lost sight of altogether. The mere accident, of whether the Invaliding Boards sat in the last week of December or the first week of January, or whether Invalids who have passed these Boards are still with their Regiments or have been embarked for England, ought not to regulate a matter of this kind. The invaliding which intervenes between the commencement of the cold season, and the commencement of the hot weather of the following year, is, in effect, the invaliding to be ascribed to the year previous; and hence it is that all the invalids who embark for England up to the close of the Troop season of 1873, for example, must properly be considered to represent the loss on this account due to 1872, no matter whether the men passed the Boards or left their Regiment in the end of 1872 or beginning of 1873.

Extent of invaliding in the Army of India in 1872, compared with 1871.

177. As may be seen on reference to Table XXIX, 2,438 men of the army in India were invalided, of whom 1,731 were recommended for change of climate, and 707 for discharge. The total loss under this head was 43·21 per 1,000—a ratio very nearly the same as that of 1871, in which it equalled 43·62. The proportion of the men sent home for change, and for discharge also, does not present any great difference, for of the total of 2,381 invalided in 1871, 1,692 are entered under the former head, and 689 under the latter. The actual numbers and the ratios for the two years may be more conveniently seen from the following abstract:—

	1872.						1871.					
	Total number invalided.	Ratio per 1,000.	Number sent home for change.	Ratio per 1,000 for change.	Number sent home for discharge.	Ratio per 1,000 for discharge.	Total number invalided.	Ratio per 1,000.	Number sent for change.	Ratio per 1,000 for change.	Number sent for discharge.	Ratio per 1,000 for discharge.
Bengal ...	1,581	43·73	1,092	30·19	489	13·54	1,564	47·53	1,115	33·88	449	13·65
Madras ...	419	41·96	298	30·43	121	11·53	489	45·09	362	33·38	127	11·71
Bombay ...	438	42·46	341	32·97	97	9·49	328	30·26	215	19·83	113	10·43
India ...	2,438	43·21	1,731	30·73	707	12·48	2,381	43·62	1,692	31·00	689	12·62

Extent of invaliding in Bengal in 1872, as compared with previous years.

178. In the Bengal Presidency taken by itself, the loss by invaliding amounted to 43·73, a ratio somewhat higher than in either of the other two Presidencies. This total was made up of 30·19 per 1,000 sent for change, and 13·54 sent for discharge, proportions which do not differ very materially from those in Madras and Bombay. A reference to the statement given in paragraph 91 of last Annual Report in which the statistics of invaliding in Bengal are recorded for the 12 years 1860—1871, shows that the total loss in 1872—43·73 is less than that of any year since 1864. From 1865 to 1871 the ratio fluctuated between 45·58 in 1868, and 53·98 in 1869. The loss due to men sent home for change in 1872—30·19, was slightly in excess of 29·69 the ratio for 1865, but less than that of any year since 1865. The loss due to men sent home for discharge, 13·54 per 1,000, is almost the same as that for 1871—13·65. In 1870 it was only 8·37, but many of the previous years yield results more unfavorable in this respect than that of 1872.

Invaliding in Madras and Bombay in 1872 compared with previous years.

179. In the Madras Presidency the total loss from invaliding was 41·96, a ratio less than that of any of the previous six years, during which it has varied from 77 in 1870 to 45·09 in 1871. The loss of men recommended for discharge, 11·53 per 1,000, is much the same as it was in the year previous. It is in the proportion of men sent home for change of climate that the greatest variations in the last six years have occurred, from a maximum of 70·4 in 1870, to a minimum of 33·38 in 1871. The particulars of invaliding in the Madras Presidency from 1860 to 1871 may be seen on reference to the statement given at paragraph 91 of the last Annual Report, which has been already mentioned. In this paragraph will also be found the statistics of invaliding in Bombay during the same period; and from these it will be observed that owing to the large number of men sent to England for change, the ratio of invaliding in 1872 was higher than in any of the previous four years. The proportion recommended for discharge,—9·49,—is considerably under what it has been formerly, but the ratio of invaliding for change, 32·97 is much above what it has ever been before.

Causes of invaliding in the three Presidencies.

180. The chief causes to which invaliding was due in each of the Presidencies are detailed in Table XXIX. Among individual diseases, Hepatitis heads the list in all three, contributing a ratio of from 6·77 to 4·97 per 1,000. Next come Phthisis, secondary Syphilis and Rheumatism, which is no doubt often of venereal origin. From these two last causes 234 men were invalided during the year. Among the groups of diseases, heart affections and bowel complaints occupy a prominent place, and from general debility more men were considered unfit for service than from any other causes. The number returned under this one head is 442, equal to nearly ten per 1,000, or more than one-fifth of the whole invaliding of the year.

Total loss by death and invaliding in the three Presidencies.

181. The total loss due to death and invaliding in the three Presidencies was as follows:—

	Per 1,000 of average strength.		
	Died.	Invalided.	Total loss.
Bengal	27·45	43·73	71·18
Madras	18·98	41·96	60·94
Bombay	18·86	42·46	61·32
India	24·21	43·21	67·42

In 1871 the total for Bengal was 65·36, for Madras 65·19, for Bombay 44·28, and for the Army as a whole 61·15.

Sickness and mortality in different stations.

182. Before leaving the statistics of disease among the men, the extent of sickness and mortality at individual stations and in individual regiments deserves attention. These details are very clearly and fully shewn in Tables XX, XXI and XXII, and

many points which it would take up too much space to discuss in this report may be studied on reference to the figures which they contain. Judged by the ratio of admissions into hospital, the most unhealthy station throughout India during 1872 was Peshawur, in which the proportion was 2,877 per 1,000. At Mount Aboo it was even higher, 2,831, but the number of men was too small to form a sufficient basis for calculation. At the same time it is worthy of notice, that in 1871 sickness was even more prevalent at Aboo than in 1872, amounting to 3,074 cases per 1,000. It will be observed that both here and at Peshawur fevers were the prevailing disease. Omitting those stations in which the strength was under 200 men, Belgaum yields the most favorable return for the full year. The admissions here equalled only 677 per 1,000.

Sickness and mortality in different regiments.

183. Table No. XXXI records the history of each corps and body of men in the three Presidencies including the extent of sickness, mortality and invaliding, and also the causes to which these were due. Arranged according to provinces, these details shew how the totals for each province, which are given in the general Tables are made up. Very great extremes under all these heads frequently present themselves even in neighbouring stations. In one battery for example at Fort William, the death-rate was only 11·63, in another at Barrackpore it was 35·21, while the extent of sickness as represented by the ratio of admissions into hospital was much the same in both. At Lucknow, in one battery the deaths equalled 81·08; in another at the same station they were only 15·87. In the 62nd Regiment at Lucknow, the sickness is represented by 876 cases per 1,000; in the 1-17th Regiment they were 1,438. Many instances of similar variations might be cited in each presidency and in each group into which they have been divided, showing how numerous are the circumstances which govern health and disease, circumstances connected with locality, with previous history, and with the composition of the particular body of men concerned.

Average number of days spent in hospital by each man.

184. The details given in Table XXXIII shewing the average number of days spent in hospital by each man in every Regiment throughout the country are of much interest, and afford a very excellent test of the relative amount of sickness. In the Bengal Presidency, the lowest average for the year was eight days in No. 7 Battery, 24th Brigade, Royal Artillery at Allahabad. Next comes the 36th Regiment at Rawul Pindee in which it was eleven; and then the 92nd Regiment at the hill station of Chuckrata, where it was just over 12 days. The very favorable return from No. 7 Battery, 24th Brigade at Allahabad is all the more remarkable, because the average in the other battery at this station was 22 days. The highest proportion was 44 days in the battery in Fort William, and the next 42, in the battery at Cawnpore. In the Madras Presidency the lowest average was 13 in one of the batteries at Bangalore, and the highest 29 in two of those at Secunderabad. In the Bombay Presidency, A Battery, 18th Brigade, gives a minimum of 10·6, and E Battery, 19th Brigade, a maximum of 28·7.

Sickness and mortality among women in the three Presidencies.

185. Among soldiers' wives throughout India representing a strength of 6,650 the admissions into hospital equalled 1,164, the daily sick 42, and the deaths 36·54 per 1,000. As has been explained in previous reports, no comparison can be drawn between the extent of sickness among the women and that among the men, for women are frequently treated in their own quarters, or do not apply for medicine in the case of ailments which, though slight, would yet be sufficient to incapacitate a man for duty and so oblige him to go to hospital. Among the women sickness was most prevalent in Bengal; here the admissions equalled 1,245, and the daily sick 48 per 1,000. In Bombay the ratios were 1,100 and 34, and in Madras, 1,011 and 32. The mortality also was highest in Bengal, 46·12 per 1,000, in Bombay it was 33·41, and in Madras only 14·72, a result which is in great measure due to the fact that cholera alone caused a mortality of 15·89 per 1,000 in Bengal, and of 6·83 in Bombay, whereas in Madras not a single death was due to this disease. The distribution of the mortality among women according to stations is shewn in No. IX of this series. Compared with 1871, the results in both Bengal and Bombay are very unfavorable. In that year the death-rate was 28·53 in the one, and 17·93 in the other. In Madras, on the other hand, 1872 shews a lower ratio, 14·72 compared with 18·30.

Sickness and mortality among children in the three Presidencies.

186. Of 11,657 children belonging to the European Regiments composing the Army of India 459 were daily sick, and 1,155 died during the year. The ratios for admissions into hospital, daily sick and deaths were respectively 946·39 and 99·08. Of this mortality 10·12 was due to cholera. The epidemic prevalence of this disease in Bengal very materially affects the returns for this Presidency, but does not account by any means for the excessive death-rate as compared with Madras. In Bengal the deaths equalled 112·95 per 1,000, of which 16·61 were due to cholera. In Madras there was no death from this cause among the children, but the total ratio is only 68·36. In Bombay again, the proportion is very high, 96·83, of which cholera contributed only 3·91. In all three Presidencies the results of 1872 are more unfavorable than in the year previous, in which the deaths among children in Bengal equalled 86·11, in Madras 50·12, and in Bombay 69·11. For the army of India as a whole, the ratio was 74·21, or nearly 25 per cent. under the ratio of 1872. The distribution of the deaths by stations and the causes to which they were due are detailed in Table X.

Deaths of children according to age, Bengal.

187. During the early periods of life the mortality among the children is especially high, as may be seen from the following statement in which the ratios for 1872 are detailed and compared at the same time with those of 1870 and 1871. In these two last years cholera was little prevalent, and the deaths from this cause were so few that they do not materially affect the results. Only nine children died of it in the one year and six in the other. In 1872 on the other hand, they numbered 109, and the ratios have therefore been entered both as a whole and also excluding cholera, so that comparison may be more exactly made with those of the previous years.

Ages as at 1st April.	Died per 1,000 of strength at different ages.			
	1870.	1871.	1872.	
	All causes.	All causes.	All causes.	Excluding cholera.
Under six months	303·11	300·50	306·89	298·54
Between six months and one year	222·22	253·43	337·81	332·05
" 12 " " 18 months	194·31	221·76	227·74	207·04
" 18 " " two years	127·14	142·48	131·08	122·61
" two years and three "	85·56	81·26	127·14	95·71
" three years and four "	23·47	40·47	98·31	64·41
" four years and five "	30·71	27·18	40·92	24·91
" five years and six "	20·00	19·53	33·46	22·31
" six years and seven "	9·80	12·50	35·17	21·98
" seven years and 15 "	11·29	7·71	21·80	8·83

Deaths of children according to age in Madras and Bombay.

188. If these results be compared with those of Madras and Bombay, it will be seen that, although owing, as has been already remarked, in great measure to the absence or less prevalence of Cholera, the mortality was less, the distribution of the deaths at different ages follows much the same rule. In the earliest periods of life the Bombay returns are most unfavorable.

Ratio of Mortality at the different Ages of the Children of the Armies of the three Presidencies, 1872.

AGES AS AT 1ST APRIL 1872.	ARMY OF BENGAL.			ARMY OF MADRAS.			ARMY OF BOMBAY.			ARMY OF INDIA.			RATIO PER 1,000 EXCLUDING CHOLERA.	
	Strength.	Deaths.	Ratio per 1,000.	Strength.	Deaths.	Ratio per 1,000.	Strength	Deaths.	Ratio per 1,000.	Strength.	Deaths	Ratio per 1,000.	Army of Bengal.	Army of India.
Under 6 months (5 months and under)	479	147	306·89	157	48	305·73	138	61	442·03	774	256	336·75	298·54	325·58
Between 6 months and 1 year	521	176	337·81	187	47	251·34	176	41	232·96	884	264	298·64	332·05	294·11
„ 12 „ „ 18 months	483	110	227·74	219	37	168·94	175	46	262·86	877	193	220·01	207·04	208·61
„ 18 „ „ 2 years	473	62	131·08	254	16	62·99	152	30	197·37	879	108	122·87	122·61	116·05
„ 2 years „ 3 „	700	89	127·14	271	15	55·35	250	20	80·00	1,221	124	101·56	95·71	81·90
„ 3 „ „ 4 „	590	58	98·31	290	12	41·38	243	8	32·92	1,123	78	69·46	64·41	50·76
„ 4 „ „ 5 „	562	23	40·92	221	4	18·10	248	4	16·13	1,031	31	30·07	24·91	19·40
„ 5 „ „ 6 „	538	18	33·46	211	5	23·70	172	4	23·26	921	27	29·32	22·31	22·81
„ 6 „ „ 7 „	455	16	35·17	183	3	16·39	175	3	17·15	813	22	27·06	21·98	19·68
„ 7 „ „ 8 „	409	8	21·80	133	... ...	5·63	150	4	9·57	692	12	15·93	8·83	7·96
„ 8 „ „ 9 „	353	8		136	2		123	... ...		612	10			
„ 9 „ „ 10 „	299	3		138	......		100	1		537	4			
„ 10 „ „ 11 „	265	6		99	1		71	......		435	7			
„ 11 „ „ 12 „	196	7		63	... ...		66	... ...		325	7			
„ 12 „ „ 13 „	160	1		52	......		45	1		257	2			
„ 13 „ „ 14 „	106	6		35	... ...		31	... ...		172	6			
„ 14 „ „ 15 „	97	1		32	......		19	... ...		148	1			
Upwards of 15 years	42	2		22	1		22	......		86	3			
TOTAL	6,728	741	110·14	2,703	191	70·66	2,356	223	94·65	11,787	1,155	97·99	93·94	87·98

For convenient comparison the ratios for Bengal are here repeated, and the actuals on which they are based are also given. It is to be noted that 35 deaths are excluded. In these the children were either still-born, or survived their births a very short time. The total ratios differ somewhat from those of the general tables, because the ratios of the general tables are calculated on the annual strength, whereas these are taken on the strengths by age as they stood on the 1st April.

Causes of deaths among children at different ages.

189. In the following statement the causes of death among children at different ages are distinguished.

Deaths of the children of the Army of India of 1872, *distributed by age, and causes of mortality.*

Ages.	Cholera.	Small-pox.	Measles.	Hooping cough.	Scarlet Fever.	Enteric Fever.	Intermittent Fevers.	Remittent and continued Fevers.	Heat Apoplexy.	Dentition.	Convulsions.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Debility.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other causes.	Total deaths of the Army of India.	
	Number of Deaths from the chief causes of Mortality at the different ages.																					
Under a month ...	1	1	1	...	...	...	...	...	...	...	26	...	...	...	...	4	31	3	...	9	76	256
1 month ...	...	...	...	...	...	...	...	2	...	...	10	...	...	...	...	3	20	2	...	1	38	
2 " ...	...	1	1	...	...	...	...	4	...	...	6	...	1	...	...	5	12	6	...	...	36	
3 " ...	...	...	1	...	...	1	...	3	...	1	6	...	1	1	...	4	8	3	...	...	29	
4 " ...	2	1	...	...	...	...	...	5	...	2	10	3	...	...	1	5	7	1	...	5	42	
5 " ...	1	1	...	...	...	...	...	2	...	3	5	2	1	...	...	10	4	3	1	2	35	
6 " ...	...	...	...	...	...	...	...	5	...	5	11	5	...	...	3	14	6	2	...	...	51	264
7 " ...	1	...	1	...	...	...	...	4	1	4	7	2	...	...	3	8	3	2	...	...	36	
8 " ...	1	...	...	...	...	...	2	3	...	6	6	2	...	...	1	12	1	5	...	1	40	
9 " ...	1	...	2	...	...	...	...	3	1	13	6	3	2	...	3	11	3	6	1	1	56	
10 " ...	1	...	...	...	...	...	...	...	...	8	8	1	1	...	1	12	4	1	1	1	39	
11 " ...	...	...	1	...	...	...	...	2	...	7	13	3	1	...	2	7	5	...	...	1	42	
12 " ...	4	...	2	...	...	...	2	1	...	6	6	2	3	...	3	13	8	2	1	3	56	193
13 " ...	...	...	2	...	...	...	...	1	...	6	5	...	...	...	1	7	...	2	...	1	25	
14 " ...	1	...	...	...	...	...	...	1	...	6	7	...	3	...	...	10	3	2	...	1	34	
15 " ...	2	...	...	...	...	...	...	2	...	6	5	...	3	...	2	11	3	...	...	1	35	
16 " ...	1	...	2	...	1	...	...	2	...	4	2	...	1	...	1	8	1	...	1	1	25	
17 " ...	...	...	...	...	...	...	...	2	...	5	...	1	2	...	1	3	1	1	1	1	18	
18 " ...	2	...	...	...	...	...	...	...	...	4	2	1	1	1	2	8	7	...	...	1	29	108
19 " ...	2	...	2	...	...	...	...	2	...	1	...	...	2	...	1	9	1	2	...	...	22	
20 " ...	1	...	...	...	...	...	...	3	...	1	2	...	1	...	1	8	2	3	...	...	22	
21 " ...	...	...	...	...	...	...	1	...	...	...	...	...	3	...	2	4	2	...	...	3	15	
22 " ...	3	...	...	...	...	...	...	1	...	1	2	...	...	...	...	7	1	1	...	1	17	
23 " ...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	8	
2 years ...	24	...	6	2	...	...	2	10	...	3	9	1	13	...	6	25	4	7	5	7	124	
3 " ...	21	...	4	...	1	...	...	6	...	...	9	8	2	...	5	8	2	2	7	3	78	
4 " ...	11	...	...	...	1	1	1	1	...	...	1	2	1	1	2	1	2	...	5	1	31	
5 " ...	6	1	...	1	1	...	...	3	...	...	4	...	1	...	2	2	...	2	3	1	27	
6 " ...	6	...	...	...	2	2	2	1	...	...	2	1	1	...	...	1	...	...	...	4	22	
7 " ...	7	...	...	...	...	...	...	2	...	...	1	...	1	...	...	...	...	...	...	1	12	
8 " ...	2	...	...	...	...	...	...	2	1	...	...	1	...	...	1	...	...	2	...	1	10	
9 " ...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	1	...	4	
10 " ...	3	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	7	
11 " ...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	
12 " ...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	
13 " ...	4	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	6	
14 " ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
15 " ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
16 " ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
17 " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	
	118	6	27	3	6	5	10	76	3	92	171	38	46	3	44	222	141	60	27	57	1,155	

Statistics of women and children for five years, 1868-1872.

190. The statistics of women and children in Bengal, during the five-year period 1868-1872, have been prepared by Dr. Bryden, and will form a valuable addition to those of European soldiers in this Presidency, during the ten-year period, 1860-1869. The printing of these ten-year tables, I may mention, has occupied much longer time than was anticipated, but the work is now approaching completion, and they will soon be ready for issue. The five years statistics of women shew on the average an admission-rate of 1,157, a daily sick-rate of 50, and a death-rate of 38·86. For children, the ratios are 916, 45, and 94·58. The excessive mortality will perhaps be better realized from the statement, that, during the five years in question, out of an average of 28,982 children in Bengal, 2,986 have died.

Mortality among officers.

191. The annual statement of deaths among officers of the British and Indian Armies, which has been compiled in the Office of the Adjutant General of the Army, and is given below, shews that among the former, out of a total strength of 1,785, there were in all 30 deaths equivalent to 16·80 per 1,000; and that among the latter, out of a total strength of 1,874, there were 27 deaths or 14·40. Both these ratios are somewhat higher than they were in 1871—15·01 for British and 12·23 for Indian Officers.

Statement of deaths among the Officers of Her Majesty's British and Indian Armies serving in the Presidency of Bengal during the year 1872.

Army.	Year.	In India.																												Out of India.		
				Cause of Death.																												
																										Accidental.						
		Strength in India (whether on leave or not) on 1st July 1872.	Deaths during the year.	Affection of Brain.	Apoplexy.	Cholera.	Concussion of the Brain.	Debility.	Diarrhœa.	Dropsy.	Dysentery.	Enteric Fever.	Extravasation of Urine.	Fatty degeneration of the Heart.	Fever.	Fever, Remittent.	Gangrene.	Heart disease.	Hepatitis.	Jaundice.	Nervous exhaustion.	Paralysis.	Pyæmia.	Sore throat.	Tetanus.	Valvular disease of the heart.	By a fall from a horse.	Drowned.	Gunshot wound.	Strength in Europe or beyond sea on 1st July whether on furlough or sick leave.	Deaths reported from England of Officers whose Battalions are serving in India.	Died at sea.
British	1872	1,560	26	...	1	5	1	...	1	...	1	1	1	1	2	...	1	1	5	1	...	...	1	...	1	...	...	1	1	225	3	1
Indian		1,427	18	1	1	2	...	2	1	1	1	1	...	...	...	1	...	2	1	...	1	1	...	...	...	1	1	...	...	447	9	...

Dr. Bryden's statistics, which include only Regimental Officers, show the following results for the British service in India as a whole, and also for each Presidency taken separately.

Statement showing the Strength and Deaths, in and out of India, of the Officers of the British Army during the year 1872.

	IN INDIA.																					OUT OF INDIA.		
			CAUSES OF DEATHS.																					
	Strength in India (whether on leave or not) on 30th June.	Total deaths during the year.	Cholera.	Pyæmia.	Hydrophobia.	Gangrene.	Remittent Fever.	Enteric Fever.	Encephalitis.	Sunstroke.	Tetanus.	Epilepsy.	Fatty degeneration of the Heart.	Aneurism of Aorta.	Dysentery.	Hepatitis.	Intestinal Hæmorrhage.	Concussion of the Brain.	Gunshot wound.	Fall from a precipice.	Drowned.	Strength in Europe or beyond sea on 30th June whether on furlough or sick leave	Deaths reported from England of Officers whose Battalions are serving in India.	Ratio of total mortality per 1,000 of total strength.
Army of Bengal	1,407	18	5	1	...	1	2	1	...	...	1	...	1	1	1	2	1	1	...	...	...	278	2	11·87
Army of Madras	408	6	...	...	...	...	1	1	...	3	...	...	...	...	...	1	...	...	...	...	...	51	1	15·25
Army of Bombay	435	10	...	...	1	...	1	...	2	...	...	1	...	...	...	1	...	...	2	1	1	98	...	18·76
Army of India	2,250	34	5	1	1	1	4	2	2	3	1	1	1	1	1	4	1	1	2	1	1	427	3	13·82

Sanitary progress.

192. Having now very briefly sketched the main facts regarding sickness and mortality among European Troops and drawn attention to Dr. Bryden's admirable series of Annual Tables in which full particulars on this important subject may be learned and studied, I pass on to consider what measures have been adopted during the year either with a view to obtain more accurate information in regard to disease or to remedy those sanitary defects on which disease so greatly depends. In this great matter progress is by no means so rapid as could be desired, but there can be no question that both among the authorities and all classes of the community sanitary reforms are engaging an attention and exciting an interest which were altogether unknown only a few years ago, and that the time for more vigorous action in the way of carrying them into effect on a large scale is fast approaching.

Registration of deaths in cantonments.

193. The registration of deaths among the Native population of cantonments has been far from satisfactory, and this is all the more to be regretted, because the cantonments offer special facilities for carrying out this important measure. During the past year attention has been called to the necessity of obtaining more accurate information, and a new form of return has been introduced so as to bring the data regarding cantonments into unison with the returns regarding the people generally. The orders of the Government contain the following observations:—"With the introduction of the new forms, it is very desirable that more attention should be devoted to the registration of vital statistics within cantonment limits. There can be no question that the health of the troops is closely connected with the health of the general population of the station, the deaths and causes of deaths among which should have a special interest for the cantonment authorities."

Cholera enquiry. Dr. D. Cunningham's observations on air.

194. The special enquiry into cholera in which Drs. Lewis and D. Cunningham are engaged has been continued during the past year. In the appendix will be found a very valuable paper by Dr. D. Cunningham on the microscopic bodies found in the air. It embodies the results of careful observations taken during the greater part of a year in two distinct localities, the Calcutta Jail and the large prison at Alipore, which is separated from it by about half a mile. These places were selected, because they afford means of comparing the statistics of sickness among the prisoners with the air observations, and this comparison was not lost sight of. The air of the main sewer was also subjected to examination. Definite results have not been attained, but the negative evidence afforded all tends to much the same conclusion as that to be deduced from the enquiries into Hallier's theory, that there is no specific germ to be found in the atmosphere which is connected with the production of cholera. The summaries of the previous literature on the subject with which Dr. Cunningham has introduced his own observations will be found of much value, both as showing what has been already done in this field and also as preparing the way for any further enquiries. The plates with which the report is illustrated are well deserving of notice, and reflect much credit both on the author and the Surveyor General's Office where they were lithographed.

Further investigations.

195. Although this paper on the air is the only one resulting from the special cholera enquiry which is submitted along with this report, investigations into many other most important questions are in progress, and many valuable observations have been made. The pathology and morbid anatomy of the disease have been carefully studied, and numerous minute dissections of the internal organs have been carried out—a work for the performance of which the facilities offered by Calcutta, with its constantly occurring cases of cholera, are unequalled. The nature of the changes taking place in the soil—a subject which is at present engaging so much of the attention of the public health authorities—has also been investigated. The soil air from various depths is being daily subjected to analysis, and the coincident variations of the temperature at similar depths recorded. These and other details in connection with the influence of soil in the production of disease are for the present reserved, so that the entire

question may be fully discussed hereafter. Experiments undertaken with the object of definitely ascertaining whether any of the secretions or excretions of persons suffering from cholera contain a transferable poison such as were recorded in last year's report have been continued, and have naturally involved much work in which care and patience are specially required. Any account of the experiments, and any conclusions as to results, must be deferred until a great number of facts have been accumulated, but it may be mentioned that these further researches in the main fully bear out the important statements and inferences previously made by these observers, and some of which have since been confirmed by various authorities in Europe. Such experimental enquiries, not only as regards cholera, but as regards many other diseases, are beyond all doubt of great practical importance, and as they are being carried out in as exhaustive a manner as possible, they cannot fail to prove of permanent value.

Proposed investigation into Delhi Boils.

196. In the course of their more immediate work concerning cholera, Drs. Lewis and Cunningham have been able to devote their attention to other questions of great interest and importance. In illustration of this, I may refer to Dr. Lewis' papers on chylous urine and on entozoa in beef and pork, in both of which facts were established which were altogether unknown before, and which have consequently attracted much attention. There are many other subjects in India of which little is yet known, and in the investigation of which the services of these officers may be employed with great practical benefit. Among these may be mentioned that of Delhi sores which has formed the subject of recent correspondence. These sores, which a few years ago were so common among the garrison, have of late almost entirely disappeared, but little is known either of the exact nature of the disease or what is the cause of their diminution. By some this gratifying fact has been attributed to the planting of trees and grass, by others to a change in the drinking water, while others again, with whom I am disposed to agree, regard it as the natural result of the sanitary improvements which have been effected as a whole. A special enquiry into the nature and causes of the Delhi and Sind sores has lately been ordered. Medical officers have been directed to examine these questions in connection with the suggestions made in a "scheme for obtaining a better knowledge of the endemic skin diseases of India" by Dr. Tilbury Fox and Dr. Farquhar, copies of which have been received from the Secretary of State, and it is proposed that further and special investigations in regard to them should be conducted by Drs. Lewis and Cunningham in connection with the duties for which they were more specially appointed so soon as time can be spared for the purpose.

And into Leprosy.

197. Leprosy is another disease in which microscopical research may prove useful, and as opportunity offers, it is very desirable that it should also be specially investigated. It may be mentioned that in one case examined by Dr. Lewis a few month ago, numerous filariæ were detected in the blood. The examination of the blood was suggested by the fact that the patient, who had been a leper for 14 years, was suddenly attacked with chyluria. It is well that this fact should be mentioned, but it would be premature to enter into any details until they have been corroborated by further observation.

Improvement in water-supply.

198. The question of providing a good water for cantonments has engaged much attention, and in addition to the general arrangements for pumps and metal pails, the orders regarding which still remain in force, though they had been but very partially acted on up to the commencement of the current year, special projects for the supply of certain stations have been either already commenced or are being prepared. Fort William has been supplied from the Calcutta water works. A proposal to give the same water to Barrackpore cannot unfortunately be carried out at present, because the necessary quantity is not available. A plan for supplying the arsenal at Allahabad is in hand; and another for meeting the wants of the Ferozepore arsenal in this respect is about to be prepared. The project for Umballa by which abundant water will be brought in from a hill stream, some miles distant, is being worked out by an engineer

specially appointed to conduct the survey. At Peshawur, Meean Meer, and Dalhousie the proposals have been sanctioned. A scheme for supplying Chuckrata is about to be submitted for orders. At the new station on the Kooldunna hill near Murree, water must be pumped up for the use of the troops. No orders, however, have yet been issued.

Filters for barracks.

199. Macnamara's filters having been sanctioned, orders have been issued allowing 5 for each battery of Light Field or Horse Artillery, 4 for each garrison battery, 12 for each regiment of Cavalry, and 18 for each regiment of Infantry. Earthen goblets are also sanctioned for cooling it and keeping it cool after it is drawn from the filters. Directions are given for keeping the filters in good working order, and for ensuring, as far as possible, the cleanliness and efficiency of the sand and charcoal employed as a filtering medium. So long as the water-supply of cantonments remains as it generally is now, the use of these filters is the best measure that can be adopted, but the employment of numerous contrivances of this description is no doubt attended with inconvenience, while at the same time every fresh handling of the water involves risk lest it should contract some impurity. When water is distributed by improved means, the filtering can be done more efficiently in central filter beds, and once it passes these, it should be subject to no further handling, but be drawn direct for use as required.

SECTION III.—NATIVE TROOPS.

Total mortality during the year. Regular Native Army.

200. The history of the chief diseases as they affected the native troops has already been sketched in connection with their prevalence among the European soldiers and other sections of the community, and it remains only to call attention very briefly to the general facts regarding the sickness and mortality of the native army as set forth in the tables, where the details relating to season, locality, and individual diseases will also be found very fully recorded. For convenient comparison the arrangement followed in last year's report will be adhered to. And first as regards the mortality. In 1871, out of a total strength of 44,477, there were 792 deaths. In 1872, with a strength of 44,516, the deaths numbered 894. In the one year the death-rate was 17·81; in the other 20·08. The ratio of loss from death in 1872 was above the average of the period 1861-69, in which it equalled 18·25, but somewhat less than that of 1869, in which it stood at 20·41. The total death-rate of 1872,20·08 per 1,000, varies much in the different groups. In Bengal Proper and Assam it was 29·81; in the Behar, Benares, Oudh, and Cawnpore group it was only 16; in Rohilcund and Meerut, 24·86; in Agra and Central India there was a minimum of 14·56; and in the Punjab, a ratio of 17·01. Table No. XVII furnishes these details, and shows at the same time how many of the deaths occurred with the regiment and how many among men who were at the time absent from it.

Central India Irregular Force.

The regiments of Central India furnished a total strength of 5,609, and among them, as shown in the seventh section of Table XVII, 76 deaths took place, 56 with their regiments and 20 more among absentees. The total mortality was only 13·55 per 1,000, a low ratio which is to be accounted for mainly by the fact that Central India to a great extent escaped cholera, to which many of the deaths among the sepoys in the Regular Native Army were due.

Punjab Frontier Field Force.

In the Punjab Irregular Force, or as it is more correctly called the Punjab Frontier Field Force, the results are not so favorable. Here cholera added considerably to the death-rate, which amounted in all to 23·47 per 1,000, the equivalent of 289 deaths in a force of 12,314.

Mortality among men with their Regiments—Regular Native Army.

201. These figures all refer to the strength of the different portions of the native army of Bengal, as borne on the rolls, and the total deaths both among the men with their regiments and also among those absent on leave so far as they can be ascertained. Some of the deaths which ought to be included in this last category no doubt are left unreported, and it is therefore more satisfactory for the purposes of vital statistics to deal only with the average strength of each regiment which has been in quarters during the year and with the deaths occurring under medical observation. But another source of error to a certain extent vitiates this calculation also, for many of the men who are allowed leave obtain it on medical grounds, and it is by no means uncommon for them to die at their homes. The mortality and the sickness also are thus somewhat understated. The strength of the regular native army calculated on this basis averaged 39,179 during 1872, or exactly 200 men less than the average for 1871. Among them 647 deaths occurred, or a ratio of 16·51 per 1,000. This result is less favorable than that of 1871, in which the mortality was 15·04. The return for 1871, however, was more than usually favorable. The group which gives the lowest death-rate in 1872 consists of the few Madras regiments serving in the Bengal Presidency, and the particulars regarding which are contained in Table XVIII. In this group, which includes the Madras troops stationed at Dorundah, Jubbulpore, Saugor, Banda, Nagode, and Nowgong, the mortality was only 6·16, a striking contrast to 16·36 in Bengal Proper and Assam, and 16·80 in Meerut and Rohilcund. In the Punjab the ratio was 13·49, in the

Madras Regiments serving in Bengal.

Agra and Central India group 10·67, and in the Dinapore and Benares group 9·33.

Central India Irregular Force.

The Central India Regiments show a mortality of 12·61 per 1,000, which compares favorably with 16·51, the ratio for the regular native army as a whole, but is in excess of that in several of the groups taken separately.

Punjab Frontier Field Force.

The Punjab Frontier Field Force, on the other hand, yields a higher death-rate than that of any group of the regular native army. Out of a strength of 10,022 there were 212 deaths, or a proportion of 21·16 per 1,000. As mentioned in last year's report, the death-rate in this force is subject to very great variations. In 1866 it was only 6·99, in 1869 it was 25·36, higher even than it was in 1872.

Diseases to which the mortality was chiefly due.

202. The diseases to which the deaths were mainly due, both in each of the groups of the regular native army and also among the irregular troops, are very clearly and succinctly shown in the third section of Table X. In the regular native army cholera accounted for 4·64 deaths per 1,000, respiratory diseases for 3·09, fevers for 2·17, and dysentery for 1·17, so that to these four diseases alone were due 11·07 of the total of 16·51. Excepting Agra and Central India, in which neither cholera nor dysentery caused any deaths, these four diseases appear as chief causes of the mortality in all the groups, and the same remark applies to the Punjab Frontier Force and also to the irregular regiments of Central India. In the one they account for 17·46 out of a total of 21·16, and in the other for 9·0 out of 12·61. In Bengal Proper, and also in Rohilcund and Meerut, phthisis and atrophy and anæmia occupy a more prominent place than in other portions of the native army.

Death-rate at different stations. First group.

203. The details of which the death-rate of each province is made up are shown in Table XIII, where the ratios for each station are entered separately and also the chief diseases to which the deaths were due. In the first group Gowhatty heads the list with a ratio of 33·57. In none of the others did it amount to 30, but in five it fluctuated between 21 and 27. At Shillong, Sylhet during 9 months' occupation, and among a small body of men at Dum-Dum, the mortality was very low.

Second group.

In the second group of stations the results are all favorable. The greatest loss in any one of them was 13·84 at Lucknow; 6 of the 15 deaths were occasioned by cholera. In four of these stations the ratio was under 10 per 1,000, and in one, Goruckpore, it was only 3·07.

Third group.

At Deyrah the mortality was very high, 43·68, but 10 of the 19 deaths were caused by cholera. In the other stations of this group, the mortality varied from 22·22 at Shajehanpore to 7·62 at Delhi.

Fourth group.

In the fourth group, the only station which yields a somewhat high ratio is Jhansie, where the deaths equalled 16·79. At none of the other places did it amount to 11. At Agra and Nowgong the results are very favorable.

Fifth group.

The Punjab stations present marked differences—from a maximum of 31·78 at Peshawur to a minimum of 1·78 at the new station of Tallagunge. In both Peshawur and Meean Meer, where the ratio was also high, the excess is accounted for by the cholera epidemic; but at other places where the death-rate exceeds the average, there was no cholera as at Dhurmsala, a hill station where the mortality equalled 22 per 1,000, the equivalent of 11 deaths. Of these 4 were due to phthisis.

Mortality in individual regiments.

204. The mortality in the Punjab Frontier and the Central India Irregular Forces is not shown by stations, as this would be but to repeat in many cases the statistics for the individual regiments by which these stations are occupied. The regimental details are fully recorded in Table XVII, and an examination of these will show still further how the mortality was distributed.

In all the groups great fluctuations are apparent. In the first of them, for example, the death-rate, which was only 2·82 in the wing of the 16th Native Infantry at Dacca, was 62·28 in the 42nd Native Infantry in Upper Assam. In the second group the ratios vary from 6·61 in the 7th Cavalry at Seetapore to 24·93 in the 35th Native Infantry at Cawnpore; in the third from 6·61 in the 8th Cavalry at Meerut to 56·85 in the 11th Native Infantry at Bareilly; in the fourth from 10·16 in the 6th Native Infantry at Morar to 21·64 in the 39th Native Infantry at Jhansie, and in the Punjab from 3·80 in the wing of the 17th Native Infantry at Umritsur to 51·32 in the 22nd Native Infantry at Jhelum, a result, however, which is not to be ascribed to Jhelum, but to the Looshai expedition, in which this regiment was engaged in the early months of the year. The Punjab Frontier Force and the Central India Irregular Regiments present differences just as marked as may be seen on reference to the two last sections of Table XVI.

Sickness of the year. Admissions into hospital

205. Among the men of the regular native army, the cases of sickness equalled 1,496 per 1,000, a ratio which is considerably in excess of 1,287, the proportion in 1871, but slightly less than that of 1869, in which it amounted to 1,500. The composition of the admission-rate is shown in the second section of Table X, from which it appears that the highest ratio, 1,895, was reached in the regiments occupying Agra and Central India, and the lowest, 971, in the Meerut and Rohilcund districts. The returns of the Madras regiments, however, which are not included in this statement, are more favorable than those of any group of the regular native army of this presidency, for among them, the admissions were only 661 per 1,000. In the Punjab Frontier Force, the ratio was very high, 1,900, higher than that in any of the groups of the regular native army. The Central India regiments show a medium ratio, 1,080.

Constant sick-rate.

The average proportion of daily sick among the different bodies of men included in these statistics is compared in the first section of this Table No. X. Estimated by this standard, the order in which they stand agrees in the main with that based on the admissions. In the regular native army the highest proportion, 59 per 1,000, was attained in Bengal Proper and Assam, and the lowest 33 in Meerut and Rohilcund. The Punjab Frontier Force gives a ratio of 52, and the Central India regiments of 38. For the Madras regiments the proportion is only 21.

Cantonment reports. Local causes of sickness.

206. In these remarks I have not attempted to do more than direct attention to the main facts depicted in Dr. Bryden's admirable series of tables. I proposed in conjunction with statistics of sickness among the troops, both European and Native, to discuss the local conditions of each station, the circumstances in fact with which disease is associated, and the defects in each of them which mainly require remedy, but this would occupy more space than can be spared in this report. Meantime, it is satisfactory to know that through the annual sanitary reports, the nature of which has been already explained,* and by other means, these important matters—the actual local defects and the measures required to remove them—are being pressed on the attention of each Cantonment Committee and of the controlling authorities.

---

* Eighth Annual Report, page 89.

SECTION IV.—JAILS.

Sickness and mortality very nearly the same as in 1869.

207. It will suffice to note very briefly the main facts concerning the sickness and mortality among the prisoners in the Bengal Presidency, as shown in the third series of tables given in the appendix. Taking the presidency as a whole, it is to be observed that the prison population had considerably increased in 1872, as compared with either 1871 or 1870; the sickness, as evidenced both by the admissions into hospital and the average daily number under treatment, had also increased, and the same is to be said of the mortality. The results of 1872, under all these heads, approximate in a very remarkable manner to those of 1869, as may be seen from the following comparison :—

		1869.	1872.
	Average strength	... 61,998	61,359
Ratio per 1,000.	Admissions into hospital	... 1,019	1,019
	Daily average sick	... 31	31
	Deaths	... 42·81	43·58

The ratios of admissions into hospital and of daily sick in both are exactly the same. In 1872, the mortality was less than one per 1,000 in excess of what it was in 1869. Both years were characterized by the wide spread prevalence of epidemic cholera. In 1869 this disease accounted for 6·24 per 1,000 of the whole death-rate. In 1872 it accounted for 4·04.

Chief forms of sickness.

208. Taking the chief diseases in the order in which they appear as causes of admissions into hospital, malarial fevers come first with a ratio of 446 per 1,000. Dysentery and diarrhœa contribute 216. Abscess and ulcer 94. Wounds and accidents 40. Respiratory diseases 35. Rheumatism and dengue each 18. These seven heads make up 867, or nearly four-fifth of the total of 1,019. Other diseases occupy a very subordinate place. None of them give 13 cases of sickness per 1,000 during the entire year. Even cholera, which contributes considerably to the mortality, yields a ratio of only 9 admissions per 1,000. The proportion of cases of malarial fever is by no means large when compared with the extent of this disease among other sections of the community The cases of this class among the prisoners, 446 per 1,000, indeed compare favorably with 472 among the European and 695 among the Native troops. The form of sickness in jails, which specially deserves attention, is dysentery and diarrhœa, from which no less than 13,291 prisoners suffered, or a proportion, as already stated, of 216 per 1,000.

Chief causes of mortality—Bowel complaints.

209. But bowel complaints, which occupy so prominent a place in the roll of sickness amongst the prisoners, are still more worthy of notice as a cause of death. From this one class of disease no less than 1,275 prisoners died, or a proportion of 20·78 per 1,000. Among Native troops they contributed 150 cases per 1,000, and among the European troops 119, but among the former of these the deaths from this cause were only 1·91, and among the latter 2·02. The deaths from bowel complaints amongst the prisoners were thus ten times greater than they were among either the European or Native soldiers. No doubt prisoners form a community which cannot be properly compared with any section of the army; but, as has been remarked in former report, the excessive prevalence of fatal dysentery and diarrhœa in a jail is specially indicative of insanitary conditions. Taking the groups of jails separately as shown in the Tables II to VII, it appears that these diseases were most fatal in the Meerut and Rohilcund group; here they caused a death-rate of 30·55 out of the total of 50·43. In the two first groups, they were also very fatal, yielding ratios of 23·98 and 23·70. The third and fourth groups hold a medium place; in the Punjab the ratio was lowest—10·36 per 1,000. Taking the individual jails as shown in Table XII, it will be observed that in very many of them the high ratio of mortality is caused by the deaths due to these affections.

General facts regarding the sickness and mortality.

210. To the statistics contained in this statement attention will be again drawn in a subsequent paragraph, but the main facts as regards the sickness and mortality of the prisoners as a whole, and in the several provinces as summarized in Table VIII, require further notice. In this Table will be found a succinct statement of the average daily sick-rate in each group of jail, not only for the year as a whole, but also for each month by itself, the proportion in which each of the chief diseases caused admissions into hospital, and what ratio of mortality was due to them. The main forms of sickness have already been mentioned, and also the very high proportion of deaths due to dysentery and diarrhœa. In all the provinces these diseases account for a large portion of the total death-rate, in some of them for more than half of it. No other form of sickness yields a death-rate at all approaching that due to these affections. In the Meerut and Rohilcund group, where dysentery and diarrhœa caused a mortality of 30·55 per 1,000, respiratory diseases, which come next, account for only 7·06. In the whole presidency, while the death-rate from dysentery and diarrhœa is 20·78, from respiratory diseases, the next most fatal on the list, it is only 4·84. In considering these important facts, it must be remembered that much of this dysentery and diarrhœa is not a primary disease; that by far the greater part of it indeed represents the sequelæ of other diseases, of fevers, of general debility, and different affections which in the native so often become attended with dysentery, and still more frequently with diarrhœa, and the fatal termination of which is in so many cases ushered in with these complications.

Results in each group compared with those of each of the preceding thirteen years.

211. Taking the totals of the various sections of Table VIII, it will be useful to compare the general results in each province during 1872 with those of the preceding thirteen years; but instead of recapitulating the details, I would refer to the statements given at pages 98 to 100 of last annual report, by means of which comparison may be conveniently made. It may be said generally that the ratios of sickness do not differ very much from what they were in 1871, and that although the mortality was high, higher in every group, excepting Meerut and Rohilcund than it was in 1871, the results are favorable when compared with the averages of a series of years.

Excessive mortality in certain jails.

212. Turning to individual jails, it will be seen, on reference to Table XII, that in many of them the mortality has been excessive. Omitting those where the number of prisoners is very small, we find that in the first group there are 10 jails, in each of which the death-rate exceeded 50 per 1,000. A few extracts from the reports of the officers in medical charge of some of these, and also of others in different parts of the country in which the mortality was exceptionally great, will help to explain the conditions under which the heavy losses occurred.

Baboo Kailas Chundra Chatterjee, Sub-Assistant Surgeon in medical charge of the Baraset Jail, writes :—

Baraset.

> "The station is situated in a place imperfectly drained and surrounded by low paddy-fields and marshy bheels, which are extensive on its west. The jail itself has low paddy-fields and low lands on its west and south-west, almost touching the walls on the same sides. The deepest parts do not get dry till the approach of the hot season. * * * There was overcrowding in the wards. * * * * The general health of the prisoners during the past year was not so good as in previous years, though it was better than during the last three months of the year preceding, during which fever prevailed in an epidemic form. It was owing to a large number of sickly prisoners having been received during the past year into the jail from this and adjoining sub-divisions as well as from the Alipore and Presidency Jails. * * * The principal causes of sickness and mortality among the prisoners were their advanced age and previous protracted ill-health, or ill-health at the time of admission in the jail, influence of the season during and after the rains, exhalations from the swampy lands in the close neighbourhood of the jail. The overcrowding in the wards, defective conservancy, &c., as mentioned under their respective heads, might be considered additional causes of sickness. There were 56 deaths during the past year, of which four took place in prisoners above 70, 20 between 60 and 68, and 7 between 50 and 56 years of age."

Dr. Bowser, the Civil Surgeon of Jessore, writes :—

Jessore.

"The so-called River Bhyrub, which is at least a narrow noisome jheel, with no current and extensive sedgy banks, is the only source of disease which the jail has to contend against in all its surroundings * * * There has been a good deal of overcrowding continuously throughout the year. Large transfers were constantly made to other jails, but yet the numbers could not be kept down to within the sanctioned capacity."

Dr. Thompson, the Civil Surgeon of Hooghly, states :—

Hooghly.

"There was no overcrowding during the year. * * * A great many of the new admissions bore evidences of extreme mal-nutrition in the shape of scorbutic gums. * * * The general health of the prisoners has suffered more or less during the year under notice; the majority of those who suffered were new admissions who brought with them their sickness from their homes, and those that were received by transfer from other jails. Fever cases, terminating in bowel affections, formed the larger number of deaths, and seemed to be dependent on the variable and destructive influences of the climate and intimately associated with destitution."

Surgeon J. G. French, M. D., the Civil Surgeon of Burdwan, writes :—

Burdwan.

"There was no overcrowding. * * * It appears that the endemic fever prevailing in the district considerably affected the health of the prisoners in the jail, not so much directly as indirectly. Men who had previously in their villages suffered from fever recovered, were admitted into the jail, and afterwards suffered much from the sequelæ of the disease and relapses. * * * I find that out of 1,052 prisoners admitted into the jail in the year 1872, 163 of them were in bad health. Of those admitted in bad health, 37 were suffering from fever, 52 from spleen, 23 from debility, and the rest from other diseases. * * * When the prisoners are compared with the free population in the villages of Burdwan, the result is favorable."

Dr. Bensley, the Civil Surgeon of Backergunge, writes :—

Backergunge.

"The people of this district are, as a rule, unable to bear much physical exertion; they are generally spare built, but appear to be tolerably acclimatized, as they are seen laboring in the rice-fields, wading through the swamps without suffering much more than ryots of drier districts; the entire country being a net-work of khals and rivers, communication is generally kept up by means of boats, each ryot is able to paddle himself from place to place. * * * The jail is situated in the middle of the town, and bounded on three sides with a tidal khal, the west alone having a road for boundary. * * * There has been no overcrowding to speak of during the year. * * * Dysentery and diarrhœa; 162 admitted under these two diseases, which have always held a prominent position in our returns; the admissions were, as usual, in other years greatest in the second-half, but they began a little earlier, *viz.*, from August to the end of the year. The two diseases prevailed both among the populace and the jail much about the same as in former years. * * * Cause of the excessive sickness and mortality has doubtless been climatic; the heat, as already noticed, was excessive, and then the rains were irregular, especially during July; this month is generally cool and very rainy with hardly any sunshine; it was exactly the reverse during the year under report: the sun came out very hot, and caused the vegetation to rot. * * * It has been a very unhealthy year throughout the district."

The Civil Surgeon of Gya writes :—

Gya.

"There was no overcrowding * * * The prevailing diseases throughout the year were fever and dysentery. After the rainy season had set in, the latter assumed a sloughing and hæmorrhagic type and proved very fatal. All the usual remedies were resorted to, but they seemed to affect the progress of the disease but slightly. As a last resource all prisoners suffering from bowel complaints were treated in the police hospital, a building situated at some distance from the native town and built on the slope of a hill. The measure proved most beneficial in its results. It is difficult to fix on any particular agency and say that it was the cause of the excessive mortality; it was, in my opinion, due to the extreme dampness of the jail and its surroundings, combined with the deteriorating effects of confinement in a badly constructed and badly ventilated jail. The majority of deaths occurred in prisoners over 40 years of age, and they were all, with the exception of one, sentenced to rigorous imprisonment."

Dr. Cullen, the Civil Surgeon of Chumparun, states :—

Chumparun.

"The unusual amount of sickness in the jail may, therefore, be attributed to four causes :—

1*st.*—A larger number of prisoners being in jail at one time.

2*nd.*—A number of very old men being admitted.

3*rd.*—A large number actually suffering from ill-health at the time of admission.

4*th.*—An unusual amount of sickness prevailing throughout the district."

Dr. Paske, the Civil Surgeon of Mirzapore, writes:—

Mirzapore.

"I never saw so many old, worn-out, diseased person as were incarcerated this year."

Dr. Prentis, the Civil Surgeon of Goruckpore, writes:—

Goruckpore.

"The health of the prisoners was worse in 1872 than had been the case for many years * * * The sickness was not confined to the jail, for all through the district miasmatic diseases were unusually prevalent, the fever that had set in after the extensive inundations of 1871 continuing during the hot winds, increasing during and after the rains until it attained its height in November. Coincident with the fever was a season of considerable scarcity, for the inundation had destroyed a large portion of the hot weather crops, and the wheat harvest of 1872 was scantier than usual, several days hot wind having shrivelled up the grain whilst it was ripening. * * * The mortality during the year was very high, and this, I believe, is to be attributed to the unhealthy season and to the large number of prisoners who were admitted into jail with broken or impaired constitutions rendering them peculiarly liable to contract disease, especially fever and bowel complaints."

Dr. Kelly, the Civil Surgeon of Bustee, states:—

Bustee.

"There was a little overcrowding in the months of July, August, and September. * * * The mortality has been large, but it occurred for the most part amongst prisoners who were in bad health on admission to jail. * * * The district was most unfavourable to health during the past year, much more so indeed than in former years."

Meerut.

The jails at Meerut, to which special reference was made in last year's report, continued most unhealthy. No new facts have been elicited in connection with the great sickness which prevailed. There seems to be very little doubt that the level of the subsoil water in the locality has risen greatly since the canal was made, and the effect of this rise in different parts of the district is well worthy of special inquiry.

Dr. Mackenzie, the Civil Surgeon of Umritsur, writes:—

Umritsur.

"Dysentery was most fatal during the last two months of the year, and ague during the last month. With the exception of the mortality and sickness from relapsing fever, I believe the mortality and sickness of the jail has not been much worse than that of the city."

Importance of testing the value of sanitary improvements in diminishing cholera in jails.

213. As regards cholera, as has been already stated in the first section of this report, the experience of the jails was favourable when compared with that of previous epidemic years. So far the evidence is satisfactory in showing the importance of sanitary improvements as the best means of warding off this disease; but there is no doubt that the question might be put to a crucial test if the suggestion of the Army Sanitary Commission were adopted and certain selected jails notorious for their liability to cholera were improved and the results observed. This matter was mentioned in the Sanitary Report for 1869.* Since then, there have been several references on the subject; but so far as I am aware, the jails in Lower Bengal, which were singled out for the experiment, have not been placed in the conditions required.

---

* Page 47.

SECTION V.—GENERAL POPULATION.

Vital statistics—Deaths from injuries.

214. The statistics of cholera, small-pox, fevers and bowel complaints among the people generally as shewn by the Mortuary Returns of the different Provinces, have been already given in Section II in connection with the history of these diseases among the European troops. From injuries which form the next general head under which registration is carried out, the mortality in 1872 presents a very marked resemblance to that of 1871, as may be seen by the following statement. Excepting in Oudh, where there is a considerable decrease, the ratios for the two years are almost and in one instance altogether identical:—

Statement showing the deaths registered from INJURIES *in the different Provinces during the year* 1872.

PROVINCE.	Population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total deaths.	Ratio of deaths per 1,000.	Ratio for 1871.
Bengal*	... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	†13,478
N.-W. Provinces ...	30,884,022	524	538	800	814	1,138	1,691	1,822	2,008	1,826	1,237	788	601	13,787	·45	·42
Punjab	17,481,189	161	183	260	304	389	535	731	739	482	275	212	200	4,471	·26	·25
Oudh	11,185,357	173	174	213	259	283	408	554	679	638	469	250	144	4,244	·38	·67
Central Provinces ...	7,266,373	152	156	171	207	276	413	344	432	417	308	179	174	3,229	·44	.40
Berar	2,184,945	47	47	44	56	81	106	80	86	108	83	55	55	848	·4	·4
British Burmah ...	2,663,110	30	42	41	43	44	35	41	38	40	38	32	35	462	·17	·20
Madras Presidency ...	30,147,779	1,154	1,040	1,148	1,159	1,514	1,265	1,363	1,450	1,360	1,358	1,195	1,144	15,150	·50	·50
Bombay Presidency ...	14,565,820	360	318	344	444	483	597	608	534	823	510	428	355	5,804	·40	·44

* No returns received.

† Number of deaths registered as due to injuries.

215. In the following table the details of fatal injuries in the different provinces are given under the four heads of suicide, wounding, accident and snake-bite or killed by wild beasts. Omitting Bengal Proper which has supplied no returns, it appears that during the year 1872, 13,408 persons in British India lost their lives by snakes or wild beasts.

Details of injuries.

Statement showing details of deaths from INJURIES *registered in the different Provinces during the year 1872.*

PROVINCE.	Population under registration.	DETAIL OF DEATHS FROM INJURIES.				TOTAL.
		Suicide.	Wounding.	Accident.	Snake-bite or killed by wild beasts.	
Bengal*	......	....	.....	......	......	......
North-Western Provinces	30,884,022	1,336	1,236	6,908	4,307	13,787
Punjab	17,481,189	227	244	3,054	946	4,471
Oudh	11,185,357	468	197	2,422	1,157	4,244
Central Provinces	7,266,373	443	210	1,408	1,168	3,229
Berar	2,184,945	132	75	396	245	848
British Burmah	2,663,110	54	78	195	135	462
Madras Presidency	30,147,779	2,366	944	8,724	3,116	15,150
Bombay Presidency	14,565,820	823	351	2,296	2,334	5,804

* No returns received.

Mortality from "all other causes."

216. The statement of deaths from "all other causes", that is to say from causes other than those which are separately specified in the former statements, does not call for any remark. The ratios fluctuate greatly in the various provinces, and in several of them there is a considerable difference in those of 1872, as compared with those of 1871.

Statement showing the deaths registered from ALL OTHER CAUSES *in the different Provinces during the year* 1872.

Provinces	Population under registration.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December	Total deaths.	Ratio of deaths per 1,000.	Ratio for 1871.
Bengal* ...																†27,323
North-Western Provinces	30,884,022	3,550	2,972	2,989	3,294	3,472	3,582	3,924	5,606	6,073	5,558	4,234	3,639	48,893	1·58	1·50
Punjab ...	17,481,180	8,154	7,407	8,141	7,743	9,197	9,032	7,482	10,115	12,924	9,935	8,198	7,298	105,626	6·04	5·60
Oudh ...	11,185,357	624	524	491	439	506	364	384	447	329	370	366	346	5,190	·47	·76
Central Provinces ...	7,266,373	1,756	1,587	1,679	1,665	1,901	2,218	2,090	2,805	3,035	2,534	1,989	1,589	24,848	3·42	2·28
Berar ...	2,184,945	836	793	792	922	1,015	1,390	1,705	2,624	2,534	1,691	1,184	1,013	16,499	7·6	4·3
British Burmah ...	2,663,110	448	441	399	393	446	463	510	524	455	441	340	232	5,092	1·91	2·77
Madras Presidency ...	30,147,779	15,701	12,565	13,136	12,622	14,269	14,574	18,253	19,512	17,823	16,475	15,487	16,759	187,176	6·21	5·27
Bombay Presidency ...	14,565,820	4,989	4,156	4,745	4,893	4,959	5,699	6,862	8,473	7,228	6,016	5,014	4,370	67,404	4·63	4·25

* No returns received

† Number of deaths registered as due to all other causes.

217. The total mortality in each province, as shewn in the following statement, varies in a very marked degree, from a minimum of 12·48 per 1,000 in British Burmah, a ratio which must be wrong, to a maximum of 37·1 in Berar :—

Total mortality in each Province.

Statement showing the deaths registered from ALL CAUSES *in the different Provinces during the year* 1872.

PROVINCE.	Population under registration	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total Deaths. ●	Ratio of deaths per 1,000	Ratio for 1871.
Bengal*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	● 261,962†
North-Western Provinces ...	30,884.022	45.673	33,880	37,699	54,569	57.186	54.884	43,476	63,009	86,106	96.058	73,233	57,475	703,248	22·77	19·55
Punjab	17,481,189	26,179	22,661	24.577	24.424	33,139	32.544	23.931	35.757	63.680	59,141	48.969	35,606	430,608	24·63	21·
Oudh	11,185,357	12.472	9,861	12,226	19.451	21,359	16.507	12,015	13.053	16,928	21,841	19.242	15.097	190,052	16·99	16·87
Central Provinces ...	7,266,373	11.895	10.295	12,229	12,978	14.118	16,089	13,747	19.045	21.767	19.754	16,322	13,148	181.387	24·96	16·20
Berar	2,184,945	3.613	3,398	4,108	5.146	6,040	7.257	7,857	12.838	12.548	8.252	5.434	4,617	81.108	37·1	17·7
British Burmah ...	2.663,110	2,696	2,643	2,674	2.664	2,582	3.074	3,507	2.977	2,744	2,663	2,460	2,555	33,239	12·48	14·26
Madras Presidency ...	30,147,779	40,850	33,524	35,011	35,520	38.806	39,096	47.815	52,650	48,183	44,351	43.332	49,044	508,182	16·86	14·71
Bombay Presidency ...	15,197,071	27,347	27,290	30,020	28,738	27,645	30,162	33.733	38,964	33.584	29,936	32.811	26,827	367,057‡	24·15	19·76

---

* No returns received.

† The number of deaths registered.

‡ There are some slight discrepancies in the Bombay statistics owing to the fact as explained by the Sanitary Commissioner that the deaths registered in the Shikarpore Collectorate, which are included in this general statement, have been omitted in the others.

General summary of deaths in each province.

218. The general results of the registration are more clearly shown in the annexed Table in which the total mortality for each province is given, and also the proportion in which the various great causes contributed to it :—

Statement showing the comparative mortality from different causes registered in each Province during the year 1872.

Province.	Population under registration.	Numbers of Deaths registered from											Ratio of Deaths per 1,000.						
						Injuries.													
		Cholera.	Small-pox.	Fevers.	Bowel Complaints.	Suicide.	Wounding.	Accident.	Snake-bite or killed by wild beasts.	Total Injuries.	All other Causes.	All Causes.	Cholera.	Small-pox.	Fevers.	Bowel Complaints.	Injuries.	All other Causes.	All Causes.
Bengal*	... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North-Western Provinces.	30,881,022	50,565	30.073	490,436	69,494	1,336	1,236	6,908	4,307	13,787	48,893	703,248	1·64	·97	15·88	2·25	·45	1·58	22·77
Punjab	17,481,189	8,727	23,728	264,711	23,345	227	244	3,054	946	4,471	105,626	430,608	·50	1·36	15·14	1·33	·26	6·04	24·63
Oudh	11,185,357	26,566	17,820	130,229	6,003	468	197	2,422	1,157	4,244	5,190	190,052	2·37	1·59	11·64	·54	·38	·47	16·99
Central Provinces ...	7,266,373	1,592	4,172	128,752	18,794	443	210	1,408	1,168	3,229	24,848	181,387	·22	·57	17·72	2·59	·41	3·42	24·96
Berar	2,184,945	1,578	8,369	31,853	21,961	132	75	396	245	848	16,499	81,108	·72	3·8	14·5	10·1	·4	7·6	37·1
British Burmah ...	2,663,110	640	845	21,396	4,804	54	78	195	135	462	5,092	33,239	·24	·32	8·03	1·89	·17	1·91	12·48
Madras Presidency ...	30,147,779	13,247	30,074	214,148	39,387	2,366	944	8,724	3,116	15,150	187,176	508,182	·44	1·30	7·10	1·31	·50	6·21	16·86
Bombay	15,197,071	15,642	26,699	206,747	33,664	823	351	2,296	2,334	5,804	67,404	367,057	1·07	1·83	14·19	2·31	·40	4·63	†24·15

*No returns received.

† See note at foot of last Statement.

Measures taken for improving the registration.

219. The statistics are still very imperfect, but looking to the magnitude of the work either as regards the extent of area or of the population which it embraces, and also to the very primitive machinery which alone is available to conduct it, this result cannot be wondered at. Still, as has been already shewn in the history of the cholera epidemic, the registration with all its imperfections supplies most valuable information. It may be and probably will be long before any thing like an accurate record of deaths and of the causes of deaths in India can be obtained, but the system which has been inaugurated is an important step towards the attainment of this great object, and the mere registration of the fact of death, even though the cause assigned may be frequently incorrect, forms a valuable portion of that education in sanitary matters without which no real progress can ever be made among the people. Measures are gradually being taken to improve the registration. In Bengal Proper certain areas have been selected in which more attention can be devoted to the subject than can be bestowed on it throughout the province taken as a whole. The data derived from these selected areas will form a guide in estimating the accuracy of the other returns, while the special supervision of these areas will not interrupt the registration throughout the country generally. In the North-Western Provinces the Sanitary Commissioner is preparing a map of the province on a scale of 10 miles to the inch, showing all the mortuary circles, a work of no small magnitude, as these circles are 932 in number. Such a map is much required for every province, for it would greatly facilitate the Sanitary Commissioners' work not only in checking the returns, but also in studying the general history of disease in their respective provinces. In the course of their tours the registers are frequently examined and their accuracy tested, as far as this can be done, by the information received from the people. In many places a rule requiring the head of the family to report the death of any member of his household within a certain time after its occurring, is being added to the bye-laws of the municipality.

Food supply of the people.

220. On the very important question of the food supply of the people and its bearing on the sanitary history of the year, the information afforded is but scant. The Bengal and Punjab reports have not yet come to hand. In that of the North-Western Provinces the subject is altogether omitted. The Sanitary Commissioner of Oudh remarks that " the year was one of the greatest scarcity since 1869," in which it will be remembered, that cholera was also prevalent in that province. In the Central Provinces, " with few exceptions, the food supply was abundant, there was no actual want anywhere". In Berar, owing to the scanty rain-fall of 1871, the crops of 1872 were below the average. " If it were not for the grain stored in the country and the quantity imported by rail from other and more favoured provinces, the people would have been badly off indeed in 1872. As it was, there was quite enough grain in the country for its wants, but it was expensive and the poorer classes found it difficult to get money to purchase." Owing to the same cause the want of water was much felt in Berar. In some places the scarcity was very serious, some villages were deserted for want of water ; in many the inhabitants were obliged to go long distances in order to procure this necessary of life, and even then could get it only in small quantities. The Sanitary Commissioner remarks that the improvement of the water-supply of the province is very urgently required. In British Burma food was generally cheap and plentiful.

Personal Proceedings of the Local Sanitary Commissioners.

221. In the early part of the cold season the Sanitary Commissioner of the North-Western Provinces accompanied me in my inspection of the Military cantonments within his province which had chiefly suffered from cholera in 1872, and subsequently visited the towns of the Meerut, Boolundshuhur and Allyghur districts. The Sanitary Commissioner of Oudh inspected and reported on every civil station in the province and assisted me in my personal enquiry into the circumstances of the cholera outbreaks at Lucknow and Fyzabad. The Sanitary Commissioner of the Punjab afforded similar aid in regard to the many cantonments of the province which had suffered from the epidemic. The Sanitary Commissioner of the Central Provinces visited

great part of the country in which cholera had chiefly prevailed, and the history of his enquiry is very minutely recorded in his report. In Berar several months were spent by the Sanitary Commissioner in inspections. All the large towns in British Burma, excepting Tavoy and Mergui, were visited by Dr. Kelly, and advice given regarding their improvement.

Sanitary Progress.

222. Regarding the North-Western Provinces, Dr. Planck remarks:—"The work of actual improvement of centres of population progressed steadily in 1872. In every town of any importance in the country this matter receives a considerable amount of attention. In some districts I have lately noticed that the smaller towns are being improved too * * * * many of the subordinate Magistrates have been lately employed in effecting a change for the better in towns hitherto quite neglected." In the Central Provinces the great sanitary event of the year has been the successful completion of the Nagpore water-works. "The whole city, excepting some high points as Hansapuri, is now supplied with excellent water from the Ambajhari reservoir. This is conveyed by iron pipes through the main streets, and standard hydrants have been erected at convenient places in the different mohullahs." The Sanitary Commissioner of British Burma mentions that a project for supplying the town of Rangoon with water is now under discussion. In the absence of the sanitary reports for Bengal and the Punjab data are wanting to show what is being done in those parts of the country. A scheme for the water-supply of Delhi has been ordered, but as there is some difference of opinion as to how much ought to be allowed per head of the population, I am not aware if the work has actually been commenced. As yet few great works of this kind have been inaugurated, but there is no question that their importance is gradually forcing itself on the attention of municipalities and of the people. For the study of disease and its causes, and especially of those causes which favor epidemics, the different provinces afford each an ample field which cannot be too diligently cultivated by the Sanitary Commissioners, but the great object to be held in view by them at all times, and especially during their tours of inspections, is the advancement of sanitary reform. Nor must it be forgotten that this is to be attained, not by impressing on the people the necessity for quarantine or for isolation of the sick, or for disinfection, or for any other measures directed specially against contagion which, even if they could be shown to be based on sound theoretical reasoning, can never be carried out in practice, but by insisting on the vital importance of attending to the conditions under which they live, in particular on the importance of pure air and good water and of every thing which tends either directly or indirectly to secure the great requisites of health.

J. M. CUNINGHAM, M. D.,

Sanitary Commr. with the Govt. of India.

APPENDIX A.

MICROSCOPIC EXAMINATIONS OF AIR.

BY

D. DOUGLAS CUNNINGHAM, M.B.,
SURGEON H. M. INDIAN MEDICAL SERVICE,
[ON SPECIAL DUTY,]
ATTACHED TO SANITARY COMMISSIONER WITH GOVERNMENT OF INDIA.

CONTENTS.

PAGE.
INTRODUCTION i

SECTION I.

Review of the Literature of Atmospheric Micrography ...

SECTION II.

Systematic Observations on Atmospheric Dust in definite localities

SECTION III.

Miscellaneous Aeroscopic Observations xxxiii

SECTION IV.

Observations on Dust deposited on ledges, leaves of trees, &c. xxxvi

SECTION V.

Observations on Dust deposited during limited periods on moist glass slides xxxviii

SECTION VI.

Observations on Organisms, and other solid bodies contained in Dew xl

SECTION VII.

Observations on Organisms in Rain-water xli

SECTION VIII.

Observations on the bodies present in the Air of Sewers xlix

SECTION IX.

Conclusions lii

APPENDIX A.

MICROSCOPIC EXAMINATIONS OF AIR.

BY

D. DOUGLAS CUNNINGHAM, M.B.

INTRODUCTION.

Subject of Report.

THE following Report contains the results of observations on the nature of the solid bodies present in the atmosphere of Calcutta and the neighbourhood. They were mainly carried on during the course of the year 1872 and dealt in greater part with the common atmospheric air, as, before entering on the examination of the characters of special atmospheres, it was necessary to acquire a thorough knowledge of the bodies generally diffused through the air and therefore liable to occur in any locality without any special significance.

Reasons for reviewing the literature of the subject.

Similar observations have been previously recorded by numerous other authors, and before proceeding to those forming the subject of the present report, it may be well briefly to review the literature relating to them, with a view to ascertain what our knowledge of the question really amounts to. It is the more desirable to do this as no general summary of the kind has, as far as I know, ever been attempted, and the information is scattered through Scientific Journals and the transactions of learned Societies in isolated papers, many of which are, when taken separately, likely to lead to very imperfect conceptions regarding the subject as a whole. In attempting anything of this kind I am well aware that the result is likely to contain numerous omissions and other imperfections, more especially in a country such as this where there is great difficulty in obtaining access to the requisite information, but, such as it is, it may yet be of use in rendering the latter part of the Report more intelligible than it might otherwise be, and in facilitating an estimate of the value of any conclusions there stated. In the following pages a chronological order has been, as much as possible, adhered to—the first observation recorded by any author being taken as a starting point for a sketch of his after work—and where this is not so or where due prominence does not seem to have been given to any set of observations, the error is to be entirely ascribed to lack of information and not to any desire to undervalue or neglect any one's work.

SECTION I.

REVIEW OF THE LITERATURE OF ATMOSPHERIC MICROGRAPHY.

Ehrenberg's observations:

Our knowledge regarding the existence of organisms in the atmosphere may be said to have commenced in 1830, when Ehrenberg published the results of a series of experiments on the subject in Poggendorff's Annals for that year. These results were that isolated forms occurred in fresh rain-water, but that careful examination of thousands of rain-drops, snow-flakes, and dew-drops had never revealed the presence of living infusoria.[1] Between 1830 and 1847 he continued his investigations on atmospheric organisms, and in the latter year published his celebrated treatise on "Passatstaub and Blutregen." The cholera epidemic of 1848[2] was the occasion of his closer study of the elements of common dust deposited from the air, and of the commencement of a series of observations, the results of which appeared in the "Monatsberichte" of the Berlin Academy for 1848, 1849, 1853, 1855, and 1858. This series included observations on the dust deposited in houses, towers, museums, libraries, hospitals filled with severe cases of cholera, and on the moss on trees in Berlin; on specimens from other parts of Germany; from hills near Zurich; from Egypt during an epidemic of cholera; from Venezuela, the Bernese Oberland, and High Alps; from Lebanon, the Altai, and the Himalaya at an elevation of 20,000 feet.

---

[1] "Übersicht, der seit 1847 fortgesetzten Untersuchungen über das von der Atmosphäre unsichtbar getragene reiche organische Leben" p. 5.

[2] Op. cit., p. 98.

His latest conclusions regarding the results of them.

In his latest publication on the subject, he states that all these observations proved the actual existence of an atmospheric kingdom of life, and that they showed not a few forms of Polygastrica, Rotifers, Tardigrades and Auguillulæ often capable of reviviscence after years of dryness.

The forms present did not belong solely to the animal kingdom, but also included sporidia and sporangia of fungi and other cryptogamic plants. The vegetable organisms were, however, constantly less numerous than those referable to the animal kingdom.[1]

No special forms of infusoria or spores were to be found in the atmospheric dust during the epidemic of cholera in 1848.

M. Gaultier de Claubry's experiments.

Shortly after the publication of Ehrenberg's observations on rain-drops, &c., M. Gaultier de Claubry tried a series of experiments on the result of passing air from various localities into water which had been previously exposed to a high temperature.[2] The results of these observations were communicated to the Société Philomathique in 1832, and showed that the animals and vegetables found in the water varied with the localities, stables, streets, wards, &c., from which the air had been derived.

Dr. Angus Smith's observations on organic matter in the air:

Even so long ago as the year 1846, Dr. Angus Smith, to whom we owe so much information regarding the impurities of air, published, in the "Memoirs of the Chemical Society," an account of some experiments bearing more or less directly on the presence of organisms or their germs in the atmosphere.[3] He pointed out that water condensed from the breath, or into which people had breathed, contained a considerable amount of organic matter, that animalcules were developed in it after a few days, and that the current belief of the day referred the development of such organisms to atmospheric germs. He also mentioned that he had procured organic matter condensed on the windows of crowded rooms, which, on standing, formed a thick glutinous mass of closely matted confervoid threads, with various species of volvox and monads.

The same observer, whilst working for the Royal Mines Commission in 1862, examined the solid impurities contained in the air of mines due to gunpowder explosions, &c. No special apparatus was required for this, as the floating crystallized bodies were spontaneously deposited on the sides of the glass tubes employed in collecting samples of air.[4] They consisted of solid products of the combustion of gunpowder, sulphate of potash, pieces of quartz or glass, dust of the rocks subjected to blasting, and filaments of organic origin.

His method of collecting the bodies suspended in the atmosphere:

In his most recent work regarding air,[5] Dr. Smith mentions that he has tried various means for securing specimens of the solid impurities of the atmosphere, among the number, filtering it through cotton wool after Pasteur's method, and that he and Mr. Dancer found solid bodies deposited on such filters when examined by the microscope. Latterly,[6] whilst engaged in experiments on disinfection for the Royal Commission on the Cattle Plague, he began the system of collecting the solids of air by frequent agitation of large bulks of it with pure water in a bottle. This serves the same purpose as drawing the air through water by an aspirator, and is much simpler and more universally applicable than the latter procedure. On examining the specimens of water so treated with the microscope, forms are visible in them at once, but no motion can usually be detected in these for some time. He was furnished by Mr. Crookes with pieces of cotton wool through which the latter gentleman had drawn the air of places infected with cattle plague, and on washing them found that some of the films were coated with small, nearly circular, structureless bodies, whilst numerous similar bodies floated free in the fluid. On examining the liquid condensed from the air of an infected cow-shed, he found similar bodies in it, together with one somewhat resembling *Paramecium*. No motion was at first visible in them, but on a subsequent examination on the following day, there was very abundant motion, and the preparation contained euglenoid cells. He found that the great difficulty in washing the air was to secure thorough purity in the distilled water, particles of impurities appearing to be carried over with the vapour.

---

[1] Op. cit., p. 100.

[2] Comptes Rendus, Tome, XLI, p. 644.

[3] "Air and Rain," p. 390. Longmans & Co., 1872.

[4] Op. cit., p. 122,

[5] Op. cit.,

[6] Op. cit., 483.

And manner in which it was practised.

When he wished to experiment on the air, he took a bottle containing a little pure distilled water, pumped the air out of it, and opened it in the locality to be investigated. The bottle was then well shaken, the air exhausted afresh, and the same process repeated for several times. By this means he was able to determine that the air of cow-houses and stables contained more particles than that of the street in which his laboratory is situated, that these sometimes moved, "if not at first yet after a time, even if the bottle had not been opened in the interval," and that a considerable mass of *débris* with hairs or fine fibres was present. The appearances described above were not however peculiar to infected places, but were found to characterize the air of a healthy cow-house also.

Subsequently he "tried the same plan on a larger scale" by pumping out, filling, and shaking a bottle five hundred times in the open air near his laboratory. This process naturally occupied some time, and there was a considerable variety of weather whilst it was being carried on. The liquid became clouded, and very light particles were visible to the naked eye floating in it. On microscopical examination "the scene was varied in a very high degree; there was evidently organic life." He did not himself carry out any detailed microscopical examination of the specimen, but handed it over to Mr. Dancer, the results of whose investigation of it will be found further on. In commenting on Mr. Dancer's observations,[1] Dr. Smith states that the organisms in the air appear "to rise as rapidly as vapour, and are not merely dry dust driven up by wind," that "they are found less when the rain falls, so that the rain washes them down into the earth," that the mere rise of vapour may be enough to raise them, and that they tend to deposit in quiet places even when not carried down by the dew.

Observations of Meyer, Stoop and Wedl.

According to Ehrenberg[2] it is stated in Robert Brown's botanical works (published in 1847) that Meyer and Stoop observed the occurrence of microscopic organisms in rain-water four days after it had fallen, and, in meteoric dust which fell in Vienna on the 31st January 1848, Dr. Wedl found dried infusoria resembling *Bursaria* and *Colpoda* or *Paramecium*.

Brittan and Swayne's observations regarding cholera in 1849.

During the epidemic of cholera in England in 1849, among the observations published by Dr. Swayne and Mr. Brittan regarding the presence of peculiar cholera cells, there is one by the latter gentleman demonstrating their occurrence in the atmosphere of infected places. The method which he employed was to condense the air of rooms in which cases of cholera had died,[3] and the bodies discovered are described by him and Dr. Swayne as identical with the smaller "annular bodies" of the choleraic discharges. A figure of these bodies was also published and they were stated to be absent from the air of non-infected places.[4]

Report of the Sub-committee of the College of Physicians.

The discussion regarding the nature of these bodies led to the appointment by the College of Physicians of a sub-committee "on the nature and import of microscopical bodies in relation to cholera," and, among other experiments, the members, Drs. Baly and Gull, tried seven on air, by condensing vapour from it, and by examining the dust of cobwebs and that deposited on the glass of windows, and arrived at the conclusion that "bodies presenting the characteristic forms of the so-called cholera-fungi are not to be detected in the air of infected places." [1]

---

[1] "Übersicht," p. 491.

[2] "Übersicht, &c.," p. 98.

[3] Lancet, October 13th, 1849.

[4] London Medical Gazette. New Series Vol. ix, 1849, p. 530.

Dundas Thompson's observations in 1849:

In the same year and in connection with the same epidemic, Dr. Dundas Thomson "subjected a large quantity of external atmospheric air in an infected district to chemical investigation, with the view of condensing any vapour, or of determining solid particles which might be disseminated through the air." [2] The result was negative, but in 1854, when the Board of Health sanctioned investigations with a view to the discovery of a tangible cause for the disease, he carried out a more extended and exhaustive series of similar experiments with the co-operation of Mr. Rainey, to whom the microscopical portion of the investigation was more especially committed.

Method employed by him in 1854.

The method which he employed for the collection of the solid particles contained in the air was by drawing the latter by means of a large aspirator through Woulfe's bottles containing distilled water. The first atmosphere investigated was that of a ward in St. Thomas' Hospital filled with patients suffering from cholera, and the aspiration was continued for four days. The result was that the water was found to contain filaments of cotton and wool, hairs, fine confervoid fungi, abundance of sporules, silicious particles and other inorganic bodies, and some very active vibriones.[3]

The second experiment was tried in a ward only half-full of cases of cholera, and in this case a U tube, surrounded with ice, was interposed between the mouth of the aspirating tube and the first Woulfe's bottle. The experiment lasted for 13 days, and the water showed on its termination some epithelial scales, but a comparative absence of fungi, and not a trace of vibriones.

In the third experiment the ward was empty, although in free communication with another containing cases of cholera, and the water showed lamp-black, but an almost entire absence of fungi.

In the fourth experiment the same apparatus was applied to the external atmosphere during a period of 21 days; vegetation was long in appearing, but when once established it very rapidly increased. On microscopic examination, cotton fibres, fuliginous matter and the mycelium and sporules of fungi were discovered, but no vibriones could be detected.

The fifth, and last experiment, consisted of an examination of the atmosphere of a sewer, the mouth of the collecting tube being set within a foot of the surface of the contained fluid, and the aspiration continued for 27 days. The fluid when examined showed a much smaller quantity of mechanical matters than in the previous experiments, but contained abundant mycelium and great numbers of vibriones.

Lord Godolphin Osborne on organisms in the air of choleraic localities.

During the prevalence of this epidemic of cholera the Revd. Lord Godolphin Osborne also carried on a series of observations on the presence of organisms in the atmosphere, by exposing slips of glass, slightly moistened with glycerine to the air over cesspools, gully-holes, &c., near houses in which the disease appeared, and "caught what he termed 'aerozoa,' chiefly minute germs and spores of fungi." [4]

Mr. Jabez Hogg's observations on air and rain-water:

In the work from which the above information is derived, Mr. Hogg mentions that from 1854 he himself has been in the habit of "catching these floating atoms," that they appear to him to be found in and on everything if only closely enough looked for, and that a series of experiments on rain

---

Lancet, November 3rd, 1849, p. 493.

[2] Appendix to "Report of the Committee for Scientific Inquiries in Relation to the Cholera Epidemic of 1854," General Board of Health Medical Council (1855), p. 121.

Op. cit., p. 122.

[4] "The Microscope," Hogg, p. 295.

and distilled water, similar to those of Samuelson and Balbiani to be described further on, have quite convinced him of "the very extensive distribution of infusorial germs and their great tenacity of life."[1] In reference to rain-water, he states that specimens of protococcus pluvialis, amœbæ, and cercomonas may always be found in it in vast numbers a few hours after it is caught, and that the purest snow-water after being kept well corked for a few weeks will be found to contain amœbæ, cercomonads and other forms of animal life.

M. Baudrimont on atmospheric micrography.

In 1855 M. A. Baudrimont published an account of his experiments on the microscopical constituents of the atmosphere[2] I regret that I have been unable to find any detailed account of his results, but his methods of experiment consisted in condensation of the atmospheric humidity, and, more frequently, in agitating the air with a small quantity of water either by means of an aspirator or by a pump. He alludes to the causes giving rise to the expectation of finding pollen and sporules in the air at certain seasons of the year, together with a throng of infusoria, but his observations did not enable him to recognise the presence of any eggs or spores.[3]

Mr. Berkeley on spores in the air.

The Rev. Mr. Berkeley in his "Introduction to Cryptogamic Botany" published in 1857, alludes to the fact of spores being wafted in the aïr and descending by gravity at greater or less distances, and to the existence in the dust of the trade winds of spores of fungi which must have travelled thousands of miles.

Gigot's observations on the emanations from marshes.

Two years afterwards, in 1859, M. L. Gigot published his "Recherches Expérimentales sur la Nature des Émanations maricageuses." According to Dr. Bastian the method employed by M. Gigot was "to draw the air of marshy districts through dilute sulphuric acid," with the result of filtering out a certain amount of organic *débris*.[4]

M. Quatrefages in the discussion on spontaneous generation in the French Academy.

In 1859 the dispute in the French Academy regarding spontaneous generation began, and in one of the first discussions on the subject[5] M. Quatrefages stated, that in remaining faithful to the doctrine of the non-existence of spontaneous generation, it was necessary to admit the existence of a very considerable number of germs in the atmosphere, and proceeded to give the results of his own experience in the matter. In examining the dust retained by the filters in M. Boussingault's studies of the rain of storms, he recognised the presence of spores in great numbers, together with encysted infusoria, large quantities of minute round and ovoid bodies suggestive of minute ova, and one or two minute rotifers. In following out the subject he collected dust on plates of glass in cellars and in an elevated room, and found that it presented the same features. In such specimens of dust he observed monads to begin to move four hours after their immersion in water.

Pouchet's observations on dust:

Shortly after this, M. F. Pouchet, in replying to the objections to his experiments, stated, that he had sought in vain for the ova of infusoria in the dust of his laboratory. He says—"Je n'y ai rencontré que des corpuscles extrêmement fins, des grains de pollen, des brins de laine provenant de mes habits, des fragments de tissus de végétaux, des grains de fécule et des filaments des papiers colorés employés dans mes expériences, &c., pas un œuf de Kolpode ou de Kérone."[6]

At this time he commenced an extensive series of observations on dust, the results of which were published in the same year.[7] He made more than 1,000 observations on the dust deposited in many different localities, of which he furnished a list at the close of his memoir on the subject. His results showed that the atmosphere contained a multitude of corpuscles consisting of mineral, vegetable and animal *débris*, in quantity proportional to the amount of wind. The mineral particles varied with the geology of the country. The main constituents of an animal nature found in the dust were various minute dried animals, such as helminths of the genus oxyuris and various species of vibriones, naviculæ, bacillaria and diatoms, fragments of coleopterous antennæ, lepidopterous scales, woollen fibres, hairs of rabbits and bats, plumes of feathers, fragments of the *tarsi* of insects, epithelial scales, and spiders' webs. Only twice were large ova, so-called cysts of infusoria, detected.

---

[1] Op. cit., p. 414.

[2] Comptes Rendus, T. xli, p. 542, 1855.

[3] "The Beginnings of Life," by H. Charlton Bastian, M. D., F. R. S., London, Macmillan and Co., 1872, p. 271.

[4] "The Beginnings of Life," p. 271.

[5] Compt. Rendus, T. xlviii, p. 30.

[6] Compt. Rendus, T. xlviii, p. 48.

[7] Compt. Rendus, T. xlviii, p. 546.

The vegetable dust consisted mainly of fragments of vegetable tissues, woody fibres in small numbers, fragments of cells and vessels, hairs of nettles and other plants, filaments of cotton, fragments of malvaceous pollen, pollen grains of epilobium and pines, and wheat starch. The latter was constantly present in very considerable quantities, and according to Pouchet was evidently what Quatrefages had mistaken for the ova of microzoa. In the same memoir he stated that he had drawn 100 litres of air through two c.c. of distilled water by means of an aspirator, and that at the close of eight days neither ova nor animalcules were present in it.

His apparatus for the collection of atmospheric particles:

In the following year the same experimenter published an account of his Aeroscope or "Moyen de rassembler dans un espace infiniment petit tous les corpuscles normalement invisibles contenus dans un volume d'air déterminé," and of the results obtained by its use.[1]

His instrument consisted of a glass tube hermetically closed at either extremity by a copper ferrule. The upper ferrule was fixed to the glass and was connected with a tube of copper terminating externally in a small funnel and internally—in the inside of the glass tube—in a very finely drawn point not more than ·5 m. m. in diameter. The other ferrule was removable and allowed of the introduction of a circular glass plate into the interior of the instrument, which was placed at 1 m. m. from the point of the tube connected with the upper ferrule. This plate was covered with adhesive matter, and, if necessary, the point of the tube was made to terminate in a minute perforated diaphragm, like the rose of a watering-pot, so as to secure the dispersion of the atmospheric particles over the surface of the plate. He employed the apparatus to collect the atmospheric dust both for direct microscopic examinations, and for experiments similar to those of Pasteur on the result of inoculating infusions with it, and satisfied himself that spores and ova were infinitely rare in the atmosphere, even of places in which they ought to abound, such as his own laboratory where infusoria and fungi were constantly present in abundance; and that media in which the atmospheric corpuscles were sown, were never more fertile than those which had not been subjected to any such contamination. It was only very exceptionally that he encountered mucedinous spores, and even more so that he detected any infusorial ova.[2]

His observations on the respiratory cavities of animals:

In the same year he carried out an extensive series of observations on the bodies introduced by the air into the respiratory organs of animals.[3] He found that these organs revealed modifications in the medium respired. The most remarkable point in regard to animals living in towns, houses, &c., was the enormous quantities of starch (together with particles of soot and fragments of clothing) present in the respiratory cavities. The quantity of these foreign bodies diminished with the distance from houses, until, in birds and mammals constantly inhabiting forests, they almost entirely disappeared in many cases, and were replaced by vegetable *débris*, chlorophyll granules, &c. In the respiratory organs of some human subjects which he examined, he also found various foreign bodies, among which, in one instance, were living arachnidan larvæ, and in another, fragments of glass, soot, &c. In the humerus of a fowl which he examined, he found fragments of glass, living filariæ, and two bodies resembling dried infusoria. In all his observations, numbering by hundreds, he never found a single spore or ovum of a microzoid.

---

[1] Compt. Rendus. T. l, p. 748.

[2] "Études Expérimentales sur la Génése Spontanée." Annales des Sciences Naturalles Quatrième Série, T., xviii, Paris, 1862.

[3] Comptes Rendus, T. l., p. 1121.

And on the impurities of snow.

About the same time he examined freshly fallen snow, in order to ascertain whether it contained any recognisable organisms.[1] He pointed out that the dirty appearance of thawing snow was due to the abundance of atmospheric particles collected by it whilst falling. The snow examined was collected in an elevated site in Rouen, and afforded material for several hundred microscopic preparations. It was found to contain an abundance of particles of soot and starch grains, some fragments of vegetable tissue, a few pollen grains, some filaments of wool, grains of silica and lime, and two spores of *Lycoperdon.* He also found two encysted infusoria or ova, three naviculæ, three bacillaria, and two bacteria, together with a considerable quantity of green organised matter in flakes, or isolated and in pairs of ovoid bodies.

In completing this extended investigation the same author carefully analysed the air of various other localities; of the open sea; of mountains above the zone of habitation and cultivation,[2] and of the summit of Mont Blanc.[3] In such localities he found atmospheric corpuscles to be infinitely rare, and was never able to recognise any bodies which could be determined to be starch, ova of infusoria or spores of mucedines. The examination of the snow from mountains confirmed him in these conclusions.

Pasteur's results and the means by which they were obtained.

In 1860, shortly after M. Pouchet had published the results of his first experiments on the air, his great opponent Pasteur appeared in the field with a series of statements of an entirely different nature.[4] Adopting Schroeder's and Dusch's principle of atmospheric filtration, but substituting gun-cotton for common cotton wool, he drew air through this filter by means of an aspirator. The gun-cotton was subsequently dissolved in alcohol and ether, and the deposit after being decanted into a watch-glass, repeatedly washed with distilled water and treated with liquor potassæ, was subjected to microscopic examination under a power of 180 diameters. He found that it contained variable quantities of corpuscles measuring from 0·01 to 0 15 m. m., and which in form and structure appeared to him to be organic. Starch was present only in comparatively small quantity. The organic corpuscles were unaffected by concentrated sulphuric acid, and were therefore probably the spores of mucedines. He mentions[5] that when he undertook these first experiments "diverses personnes très autorisés etaient désireuses de constater par elles-mêmes l'exactitude de mes resultats parce que me disaient elles, ayant eu l' occasion assez fréquente d' étudier des poussiéres elles n'y avaient pas vu de spores."

Pursuing these observations he came to the conclusions that a pellet of gun-cotton exposed to a current of air in the Rue d' Ulm for 24 hours in summer, after a series of fine days, filtered out several thousand organised corpuscles for every litre of air drawn through it;[6] that germs were not evenly distributed through the atmosphere; that rain diminished their numbers;[7] that still air, such as that in the cellars of the Observatory in Paris, contained few or none of them; that it was impossible for the most skilful naturalist to decide whether they were of animal or vegetable nature, but that "bodies resembling encysted infusoria were occasionally found, and also globules resembling eggs of these creatures."[8] At a later period he found pus cells in the water condensed from the air of localities in which cases of suppuration abounded, and, on examining air expelled from the hospitals during the last epidemic of cholera in Paris, discovered all kinds of spores present in it.

MM. Joly and Musset's observations.

MM. N. Joly and Charles Musset also came forward in 1860 with the result of observations on the air.[9] They affirmed that they had repeated Pasteur's experiments at Toulouse, had found his method imperfect and had arrived at conclusions similar to those of M. Pouchet. According to them the atmosphere in winter, and under the circumstances in which their experiments were carried on, only contains a very small number of organised bodies, one quite insufficient to account for the immense number of microscopic beings appearing in infusions. The result of their experiments was communicated to the Academy of Sciences in Toulouse in March 1860. Independently of Pouchet they were led to examine snow as an index of the organic contaminations of the air, and in it they found the same bodies as in dust; the same absence of germs or their presence in very small numbers only. They also examined natural deposits of dust with similar results and found that a mass of cotton-wool suspended at an elevation of 6 *mètres* from the soil during a period of 15 days only contained a very small quantity of organic corpuscles.

---

[1] Comptes Rendus, T. l., p. 532.
[2] Comptes Rendus, T l. p. 1014.
[3] Comptes Rendus, T. lvii, p. 765.
[4] Comptes Rendus. T. li, p. 303, 1860.
[5] Annales des Sc. Nat, T. xvi, p. 24.
[6] Annales de Chimie et de Physique, 1862, p. 32.
[7] Comptes Rendus, T. li, p. 348.
[8] "The Beginnings of Life," p. 274.
[9] Comptes Rendus, T. l, p. 647.

The same authors subsequently appeared prominently in the acrimonious discussion regarding the air of mountainous regions, but, as their experiments and statements bear reference to the effect of the admission of such air to infusions rather than to microscopical investigations of the bodies actually present in it itself, they need not be further alluded to here.

Information in the Reports of the Army Medical Department:

The Annual Reports of the Army Medical Department for the year 1860 and onwards contain much valuable matter regarding the particles suspended in atmospheric air, both in the form of Reports on original investigations and in Dr. Parkes' yearly summaries of the progress of Hygienic Science.

Report on the Barracks at Gravesend.

The volume for 1861 [1] contains a "Report on the ventilation of the New Barracks at Gravesend," by Drs. Hewlett, St. John Stanley and Baynes Reed. In order to discover the suspended impurities in a barrack room, 8·088 cubic feet of air was drawn through a solution of permanganate of potash by means of an aspirator. The solution was decolorized and a deposit occurred, which, on microscopic examination, was found to consist of scales of pavement epithelium, fragments of cotton fibres and shreds of wool, together with amorphous particles in large numbers.

Frank and Devergie's experiments:

In this year also Dr. Frank examined the air of the wards in Fort Pitt, by means of Pouchet's Aeroscope and in several instances detected the presence of *unequivocal* epithelial cells. In Dr. Parkes' "Review" for 1862 [2] it is mentioned that, among recent continental observations, Devergie had "examined the air in the vicinity of a patient with hospital-gangrene and detected an enormous proportion of organic matter in it," and that a good many experiments were tried regarding the air at Fort Pitt. Drawing air through water was found more convenient than the use of Pouchet's aeroscope and the amount of suspended matter thus found, even in the air of well-ventilated wards, was most remarkable. "Bits of wool, cotton, particles of hair, and epithelial cells were most common." Small cells of uncertain origin were also present, and particles of dust and starch together with other bodies of uncertain origin occurred occasionally.

Dr. F. de Chaumont's Reports.

In 1865 a "Report on the ventilation of the New Military Hospital at Hilsea," by Dr. F. de Chaumont, appeared, in which the author states that "the aeroscope showed suspended matters, portions of cloth, wool, &c., and some fragments of coal and ashes; but on the whole very little." [3]

In the volume for 1867 [4] another Report by the same observer "of an experimental investigation into the ventilation of new barracks at Chelsea" was published. The aeroscope was not employed in this instance, but 120 cubic feet of air were drawn through a freezing mixture and 4·7 c. c. of fluid condensed from it. This was found to contain epithelium in large quantity, hair and various fibres, sand, soot, crystalline substances and chloride of sodium? together with sporangia of fungi and monads in considerable quantity."

---

[1] The Statistical Sanitary and Medical Reports of the Army Medical Department for 1861, p. 382.

[2] Op. cit. 1862, p. 308.

[3] Op. cit. 1865, p. 457.

[4] Op. cit. 1867, p. 272.

Dr. Wright's observations.

The volume for 1868[1] contains an appendix entitled "Observations on the air of Barrack Room, Royal Victoria Hospital, Netley" by Dr. R. T. Wright. The observations were conducted on the nights of the 9th and 10th of July 1869 and included a microscopical examination of the solid impurities of the air. Twenty-six cubic feet of air were drawn through a little water by means of an aspirator and the suspended matter collected. It was composed of cotton fibres, starch granules, crystalline particles of dust, fragments of vegetable tissues of various sorts, pollen, amorphous molecules, detritus of epithelium, indefinite filaments and minute moving particles.

MM. Eiselt and Bechi's experiments.

Early in 1861, Dr. Eiselt of Prague published an account of his discovery of pus cells in the air of the Orphan Asylum in that city by means of Pouchet's aeroscope.[2] In the same year the results of M. E. Bechi's investigation into the air of the marshes in Tuscany appeared in the *Comptes Rendus*.[3] He examined the air of the country near the marsh of Scarlino, which is a very feverish locality. His experiments were chiefly carried on in the months from June to November, and were mainly directed to a chemical examination of the vapour deposited from the air, either as natural dew, or as the result of artificial means for securing its condensation. On some occasions only vegetable filaments were developed in these specimens of fluid after several days. They floated on the surface and were found to belong to a kind of alga. The fluid itself when quite recent showed no microscopic organisms, and the algal filaments, above alluded to, were not peculiar to it, but were found to occur in distilled water when left to itself for some time.

The Lancet's description of the dust in town-houses.

In the *Lancet* of October 19th, 1861, it is mentioned that the dust abounding in town houses in dry weather consists in great part of pulverized horse-dung and the grindings of shoe-leather, and that starch corpuscles are the most constant of its organic constituents.

Reveil and Chalvet on the air of St Louis.

In 1862 Reveil, by means of an aeroscope, showed that the air in the surgical wards in the hospital of St. Louis contained epithelial cells and filaments of lint charged with organic corpuscles,[4] and in the same year Chalvet examined the air of the same hospital, whilst being cleaned, with much the same results, finding a very large mass of organic matter mainly composed of epithelium.[5]

Dr Jeffries Wyman on atmospheric dust.

In this year also Dr. Jeffries Wyman and Dr. Salisbury published accounts of what seem to have been the first American researches on the solid impurities of the air. The former author, whilst engaged in experiments on the subject of spontaneous generation,[6] was led to examine the dust deposited in attics, as well as floating atmospheric dust collected on glass plates coated with glycerine. He found the *débris* of animal and vegetable tissues (the latter in much greater quantity), starch-corpuscles, spores—some of which were apparently of confervoid nature—and much less frequently bodies which seemed to be ova of invertebrate animals. Both eggs and spores were of rare occurrence, compared with the dust or even with the organic constituents of it. He found no dried animalcules capable of resuscitation and no animalcules appeared until the dust had been macerated for several days, but at a later period he writes that "abundant proof has been brought forward to show that the spores or germs of infusoria exist in the air in quantities amply sufficient to account for the presence of living organisms in solutions freely exposed."[7]

Dr. Salisbury on the cause of malarial fevers:

Dr. Salisbury's observations bear reference to the causation of intermittent and remittent fevers.[8] In the year 1862 there was a great prevalence of intermittent fevers in the low marshy valleys of the Ohio and Mississipi. They appeared in the month

---

Op. cit. 1868, p. 251.

Wochenblatt Zeitschrift der K. K. Gesellschaft der Aertzte in Wien, No. 13, 1861.

Comptes Rendus, T. lii, p. 852.

Ann. d'Hygiène,, July 1862, p. 240, quoted by Parkes, "Practical Hygiene," Third Edition, p. 87.

[5] Revue Médicale, June 30, 1862, p. 15.

[6] American Journal of Science and Arts, second series, vol. xxxiv, p. 79, November 1862.

[7] American Journal of Science and Arts, September 1867.

[8] American Journal of Medical Sciences, April 1866, p. 51.

of May, and were very prevalent in July and August. The season was a very wet one up to the end of June, but there was no rain in July, August or September, and with the cessation of the rain the increase in the number of cases of fever occurred. Dr. Salisbury in the first place examined saliva and mucus from the mouth and *nares* of the sufferers, and detected the presence of large numbers of zoospores, animalcules, diatoms, desmids, cells and filaments of algæ, and spores of fungi. The only bodies which were of constant occurrence, and generally in great abundance, were small oblong cellules which were either isolated or grouped in masses. They had a distinct nucleus contained within a smooth cellular envelope. He decided that they were algal cellules chiefly resembling palmellæ, and found that they only occurred in malarial districts.

His method of observation:

Its results.

He then proceeded to look for them in the air, his method of procedure being to suspend pieces of glass over marshy pools and swampy places. The glasses were set in the evening and removed before sun-rise next morning. Drops of water were found adhering to their under-surfaces and containing numerous cells of various kinds, but none resembling the peculiar palmelloid cellules previously alluded to. These were however constantly present in considerable numbers on the upper surfaces. His next step was to endeavour to ascertain from what source they were derived, and, after a considerable amount of fruitless search, he discovered it in a sort of greyish mould covering the recently exposed surfaces of cracks in rich prairie ground, which had been recently dried and was much broken up by the feet of cattle. On suspending glasses over places covered by this mould, he found numbers of the cellules in the fluid on their under-surfaces.

In following out these experiments Dr. Salisbury came to the conclusions that cryptogamic spores rise chiefly during the night and fall shortly after sunrise; that the height to which the cellules in question rose was 30 to 100 feet from the surface; that none of them were present during the day; that covering the soil to a depth of several inches with straw or quicklime prevented their rise; that a stay of 15 minutes in places in which they abounded gave rise to dryness and febrile heat of the throat coincident with their presence in the pharyngeal mucus; and that persons exposed to their inhalation, even far from their original source, under entirely different circumstances, in non-malarial districts, suffered from attacks of fever as a consequence.[1]

MM. Samuelson and Balbiani's Experiments.

MM. Samuelson and Balbiani also at this time began a series of experiments on air and investigations into the constituents of dust, in one of the earliest of which the latter observer found *Cyclidium glaucoma* in the moistened dust from a window. Mr. Samuelson communicated the results of his work both to the French Academy[2] and to the British Association in the following year. He stated that he had procured specimens of dust from Japan, Alexandria, Trieste, Tunis, Peru and Melbourne, and that, on sowing portions of them in distilled water, he always obtained a multitude of infusoria. These consisted mainly of monads, vibriones, amœbæ and cercomonads. Pure distilled water never showed any organisms so long as it was covered in such a way as to exclude dust, but when exposed for a day it was found to contain a light sediment composed of mineral and vegetable particles, embedded in a gelatinous basis formed of sessile monads which subsequently resumed life and activity and "peopled the water." [3]

In the dust from window panes when immersed in distilled water he found specimens of *Cercomonas fusiformis*, *Amœbæ*, *Vorticellæ*, *Enchelis*, *Kerona* (?) and cysts containing zoospores, together with vegetable cells in great number and variety, and on one occasion large quantities of *Protococcus pluvialis*. Vibriones and monads were of daily occurrence. His conclusions in his memoir to the Academy were as follows[1]:—1. "The atmosphere in all parts of the world is more or less charged with corpuscles belonging to the three kingdoms of nature, the animal, vegetable and mineral: with particles of silica, chalk, &c., with vegetable matters, fresh and in a state of decomposition, with animal and vegetable fibrils, cysts and germs of infusoria, and probably, in some more rare cases, of nematoid worms.

---

[1] In the "Journal de Médicine de Bruxelles" for April 1866, Dr. Hannon published a letter elicited by the appearance of Dr. Salisbury's observations in reference to "the cryptogamic origin of intermittent or marsh fevers." In this he stated that the facts had been long known in Belgium, that Professor Charles Morren of Liege, even so far back as 1843, had warned him of the risks of cultivating *Vaucheriæ*, *Oscillatoriæ* and *Conferva*, and that he himself actually did suffer from fever wilst engaged in such work.

[2] Comptes Rendus, T. LVII., p. 87. "Micrographie Atmosphérique."

[3] Quart. Journal of Science, p. 484, Oct. 1870. "The Controversy on Spontaneous Generation with recent Experiments," by J. Samuelson.

2. "The infusoria consist in greater part of the germs of the obscure types known at present as *Monads*, *Vibriones*, *Kolpoda*, &c., but those of *Cyclidia*, *Trachelians*, *Keronians*, *Vorticellæ*, &c., are likewise present.

3. "These organised bodies are present in variable quantities according to the condition of the atmosphere, more abundant when the atmosphere is dry and less so when there is much rain; they float in the entire atmosphere, and ordinarily they penetrate everywhere with it.

4. "The tenacity of life of the germs, and specially of those of the obscure forms vibrio, monas and bacterium, is much stronger than is admitted by some observers."

Observations by Mr. Samuelson regarding developments in distilled water exposed to the air:

In his paper read before the British Association of the same year, Mr. Samuelson pointed out the practical importance of examining the air of wards. In June, July and August 1870, he repeated these experiments by exposing saucers of distilled water to the air. At the conclusion of the exposure he found that the fluid contained particles of soot and silex, and minute moving germs. On keeping some of this water for some time, occasionally adding a little distilled water to make up for loss by evaporation, zoospores and other unicellular forms together with amœbæ appeared. Some saucers which had been exposed to the air for 16 days, on some of which rain had fallen, were found dried up and containing a good deal of dust. After being kept for 12 days more, this dust was heated to 480°C and 280°C, and subsequently boiled in distilled water. Some hours afterwards, the water was divided between two test-tubes, one of which was left open, while the other was plugged with cotton wool. On examining the fluid in the open tube five days afterwards, active cercomonads and "other lowly types" were found, and four days later, though the developments in the plugged tube were not so advanced or various as in the open one, they were alike in character, and active amœbæ were present in both specimens. The result of all his observations have led Mr. Samuelson to the conclusion that the most conspicuous types of organisms occurring in distilled water in saucers, exposed to the air in open situations, are amœbæ and fusiform monads; and, "that the time is not far distant when all these lowly types, now known as protozoa, will be traced in their earliest stages to the atmosphere, the dust of the road, of our parlour windows, and indeed of every place into which air and dust penetrate."

Also in the rain-water of various localities.

The same author also tried experiments on the existence of organisms or their germs in rain water. On the 4th of August 1870 he caught some rain as it fell and kept it exposed to the air in a tall champagne glass. The fluid contained numerous particles of dust, but at first showed no evidence of the presence of any living bodies; organic particles, fragments of minerals, empty sheaths, empty cell-walls and moving specks being all the objects to be detected in it. When again examined after an interval of five days numerous yeast-like cells were found in it.

On the 22nd August he again caught some falling rain in two localities in Liverpool; one in the very outskirts, the other in one of the most unhealthy of the lower parts of the town. In the former specimen, at the time it was obtained, there were a few unicellular organisms and a little soot and silex; in the latter one there were no animal or vegetable germs, but large quantities of soot and silex. On the following day the first preparation was found to be full of the unicellular bodies previously alluded to, which were now budding out into filaments; whilst in the second, at the same time, there were no germs or mycelium of any kind. On the next day the filaments in the specimen derived from the outskirts of the town, "had assumed the form of a straggling mycelium," and "there were also swarms of minute rapidly-moving infusorial germs along with somewhat larger ciliated infusoria."[1]

---

[1] Comptes Rendus, T. LVII, p. 89.

M. Lemaire's observations, and experiments.

In a communication to the French Academy in the year 1863[2] M. J. Lemaire stated that his observations had demonstrated that atmospheric dust served as the aliment of infusoria, and that in certain conditions it alone allowed of the development and multiplication of these minute creatures.

In the following year he investigated the microscopic constituents of marsh-air.[3] The locality in which he carried on his experiments was Sologne, which at that time was a very malarious district. On condensing the atmospheric vapour he found it to contain microphytes and microzoa in much larger proportion than that obtained from the air of the healthy district of Romainville, 300 feet above the Seine. The bodies present were described as consisting of microphytes, bacteria and vibriones. In one case at Romainville at the time of its condensation the water contained particles of dust, filaments of various sorts, a few ovoid spores and a great many small semi-transparent bodies which were observed in other experiments also. Twenty-four hours afterwards it contained spores, bijugated cells, vibriones, bacteria and monads, and 48 hours afterwards the spores and cells had disappeared and the vibriones and bacteria had become motionless whilst the monads were still very numerous and active.

In 1867[4] and 1868[5] he studied the air of hospitals and found that the water condensed from it contained bacteria, monads and vibriones, and that the air expired from the respiratory passages contained bacteria, vibriones, fungoid cells and large numbers of round or oval diaphanous bodies. In the former year he informed the Academy that in his experiments on alcoholic and putrid fermentations, he had demonstrated that the gases given off during these processes carried up large quantities of propagula, spores and re-productive bodies of microzoa or even fully developed animalcules, and that those which he had shown to be present in the perspiratory fluid were probably diffused through the air in the same manner.[6] In the same paper he mentioned that he had found fully developed animalcules in fluid procured from the air of the Fort de l'Est, six hours after its condensation; that microphytes and microzoa were always developed in the fluid condensed from the air of dissecting rooms, of confined spaces and over marshes, that the products of respiration must often convey not the mere germs of microzoa, but even fully developed specimens of such bodies derived from decayed teeth, &c., and that the condensed vapour of breath does not putrify spontaneously, but on account of the presence of microzoa and their germs derived from the mouth, &c.

Dr. Lionel Beale on the microscopy of dust.

Dr. Lionel Beale as well as Dr. Angus Smith examined infected air during the prevalence of the cattle plague in 1866. He also obtained his specimens—consisting of cotton wool which had been exposed in glass tubes to the breath of diseased and dying animals—from Mr. Crookes. He moistened the tubes and wool with glycerine, and found that the fluid contained numbers of minute particles of various kinds, among them "undoubted sporules of fungi."[7] Dr. Beale from his long and profound experience in microscopic work is of course perfectly familiar with the ordinary constituents of atmospheric dust, and in "How to Work with the Microscope"[8] he enumerates and figures many of them, such as starch grains, fibres, fragments of feathers, hairs, insect scales, fragments of vegetable tissues, particles of sand, soot, &c. In the first of the two books quoted above, he states that the germs of fungi are almost constantly present everywhere in the atmosphere, that they are for the most part of oblong oval form and frequently exhibit a constriction, and that they belong to numerous different species and are wafted for long distances at different seasons. He also mentions that animal germs are among the familiar constituents of dust, and throws out the suggestion that the malarial poison may possibly be a degraded form of the bioplasm of lower plants and animals, incapable of returning to a healthy condition.

---

[1] Quarterly Journal of Science, October 1870, p. 496.
[2] Comptes Rendus, T. LVII, p. 625, 1863.
[3] Popular Science Review, October 1864, p. 107.
[4] Recherches clinique et experimentales sur les Maladie Infectienses, par MM. Coze et Feltz, Paris, 1872.
[5] Comptes Rendus, October 14th, 1868.
[6] "Recherches sur la nature des Miasmes fournis par le corps de l'Homme en Santé." Comptes Rendus T., LXV., 1867. p. 637.
[7] "Disease Germs, their Nature and Origin," p. 157.
[8] Fourth edition, p. 195, 196 and Plate XLIV

M. Poulet on organisms in the breath in whooping cough.

In 1867 M. V. Poulet condensed the vapour of the breath in cases of whooping cough, and found large numbers of *Bacterium termo*, of *Monas termo* and of *Bacterium bacillus* in the fluid.[1]

Mr. Dancer on the dust of flues.

Mr. Dancer of Manchester in the same year published the results of his observations on flue-dust, in which he showed that it consisted of ferruginous matters and crystallized substances, together with a large quantity of peculiar mineral spherules. As was previously mentioned in the description of Dr. Smith's experiments, it was to Mr. Dancer that the former gentleman committed the detailed microscopic examination of the results of his prolonged washing of the external air in Manchester.

He communicated the results of his investigations to the Literary and Philosophical Society of Manchester in a paper entitled "Microscopical Examination of the Solid Particles from the Air of Manchester." During the first few days of observation, few living organisms were visible, "but, as it afterwards proved, the germs of plant and animal life (probably in a dormant condition) were present." The objects ultimately detected were mainly the following, and are enumerated in the order of their prevalence. Fungoid cells were present in immense numbers, an average field of $\frac{1}{100}$th of an inch in diameter containing as many as 100 of them, which would give 250,000 in a single drop of the fluid. Mycelial filaments "similar to those of rust or mildew" on decaying vegetation were likewise abundant, which rapidly increased in quantity, and were shortly afterwards accompanied by numerous ciliated zoospores. The variety of fungi present was small, so far as could be judged from the mycelial filaments and conidial cells.

Next in frequency to the fungal elements were fragments of vegetable tissues, the greater part of which were more or less charred. They consisted of vegetable hairs, cotton fibres, and a few granules of starch and long elliptical bodies resembling the pollen of the lily.

After a few days a considerable number of infusoria made their appearance. Monads were the most abundant of these, but there were also specimens of *Paramecium aurelia*, of *Rotifers*, &c.

There was a marked absence of carbonaceous matter from the specimen, and very few animal hairs were present.

From the amount of spores or conidia in a drop of the fluid, Mr. Dancer calculates that 37½ millions of these bodies, exclusive of other substances, were collected from 2,495 litres of "the air of Manchester"—a quantity which would be respired in about 10 hours by a man of ordinary size when actively employed.

Mr. Lund's experiments in Manchester.

In 1868 Mr. Lund of Manchester read a paper before the British Medical Association on experiments on the air of one of the surgical wards of the Manchester Royal Infirmary.[2] He employed Dr. Smith's method of procuring specimens for examination. The bottle was shaken 500 times. After 48 hours the fluid showed evidences of the presence of organic life in it, and on the 5th day it contained numerous active vorticellæ and an abundance of active monads.

Organisms in meteoric dust.

On the 24th March 1869, a fall of red meteoric dust occurred in Sicily, and Professor Silvestri of Catania, who examined it microscopically at the time of its fall, found it to contain numerous specimens of pollen, unicellular algæ apparently of the genus protococcus, spores and filaments of other algæ, and active zoospores.[3]

---

[1] Comptes Rendus, T, LXV, p. 255, 1867.

[2] Lancet, August 15, 1868.

[3] Ehrenberg. Op. cit., p. 63.

Mr. Metcalfe Johnson's "air sieve."

In a paper contained in the second volume of the Monthly Microscopical Journal[1] Mr. Metcalfe Johnson mentioned a method of collecting solid particles from the air by means of an "air sieve" and in the following year he published a short account of the apparatus.[2] It consisted of a glass plate in a small deal-box over which a stream of water trickled down, and was collected in a trough beneath. A current of air was allowed to impinge on it and the suspended particles were thus collected free from injury, the surface being at the same time more freely exposed than in Smith's method. By means of it the observer "found varying quantities of *Monas lens*, besides other air contents."

Mr. Parfitt on atmospheric sporules.

In the same year Mr. Edward Parfitt, Curator of the Devon and Exeter Institution, published a paper[3] on "spontaneous generation," in which he mentioned that in spite of having studied fungi for at least 20 years, he had never found them filling the atmosphere with sporules to the extent asserted to be the case by some authors.

Dr. Trautman on "decomposition cells."

At this time also, Dr. Trautman's observations appeared in Germany.[4] This observer condensed the vapour in the air of inhabited rooms, and found it to contain numerous small cells which he termed "decomposition cells." He found that these bodies were easily detected in the dust deposited in corners of rooms, on books, &c., and that they existed in the atmosphere "as extremely fine punctiform molecules" beginning to grow on coming in contact with water, and by a repeated process of division becoming developed into zooglœa, bacteria and vibriones. Dr. Parkes in his review of the subject states that "as to the existence of such cells in the atmosphere, there is little doubt" but that their identity with the bacteria and vibriones of fluids appears to be by no means demonstrated as yet.

Professor Tyndall's lecture on "Dust and Disease."

In the beginning of the following year general attention was attracted to the subject of solid atmospheric impurities by Professor Tyndall's brilliant lecture on "Dust and Disease" at the Royal Institution, and the result of this attention manifests itself in the scientific periodicals of the year in the form of numerous accounts of investigations on the subject.

Dr. Maddox's apparatus and experiments.

One of the first and most important of such experiments was that begun at this time by Dr. R. L. Maddox.[5] Clearly realising the fallacies inherent in methods of collecting and estimating the amount of organisms in the atmosphere such as those of Dr. Angus Smith and others, in which water is employed as the medium for their retention, he devised an instrument which, in most points, was essentially similar to the "aeroscope" used by Pouchet, but differed from it in the fact that a current of air was made to traverse it without the aid of an aspirator as employed by that observer. In Dr. Maddox's apparatus this was secured by means of a vane which, when the instrument was exposed to moving air, kept the mouth in the direction of the current by causing the whole apparatus to rotate on the spindle by which it was supported. When, on the other hand, still air was to be examined, a current was ingeniously secured by means of a chimney conveying heated air from the flame of a spirit lamp.

In the first paper which Dr. Maddox published in reference to the use of this "aëroconiscope," he stated that by means of it he had been enabled to detect the presence of organic and mineral *débris*, pollen grains, minute germs of various fungi or protophytes, and excessively minute bodies, "molecules," or "globules," &c., in the atmosphere, but that a series of examinations, carried on during a period of 40 days, showed that, at the time and in the locality in which he was working, the air was by no means loaded with microscopic germs. The largest number visible in any collection of dust obtained by 24 hours' exposure of the apparatus was only 21, not including bacteroid bodies, and only a few of these germinated on being cultivated in suitable cells.

---

[1] Monthly Microscopical Journal, vol. ii, p. 100.

[2] Op. cit., vol. iv, p. 68.

[3] Monthly Microscopical Journal, vol. ii, p. 253.

[4] Report on the Progress of Hygiene, by Dr. Parkes, Army Sanitary Report for 1867, p. 250.

[5] The Monthly Microscopical Journal, Vol. III, p. 286.

Pursuing his experiments sedulously during a period of months, Dr. Maddox arrived at numerous interesting results, among which were, that there was no special prevalence of germs with any special wind, nor any special relation between the force of wind and the quantity of spores, but that there was ample proof of the increase of dust in the air when the ground was dry, and that a gentle breeze was most productive in organic cells. The amount of spores detected in any single specimen varied from a maximum of 250 to a minimum of none, ranging through intermediate numbers of 112, 87, 60, &c. Only 46 varieties of vegetable germs were observed, the prevailing form consisting of pale olive-coloured oval cells, frequently associated with small round rather darker ones, and belonging apparently to some kind of smut. Observations were taken on 115 days in the months from April to November inclusive, and the largest results were obtained in July and August.[1]

Dr. Burdon Sanderson on the atmospheric germs of Fungi.

In the same year, whilst engaged in his researches on contagion, Dr. Burdon Sanderson tried a few experiments regarding the microscopic characters of atmospheric dust, and the presence of fungal germs in it.[2] Most of these only afforded negative results, as the amount of soot and dust present in the air in London obscured the preparations very greatly when Pouchet's method of collection was employed. Dr. Sanderson found the simple exposure of glass plates smeared with glycerine much better adapted for the purpose under such circumstances, and in such specimens found that it was always possible to discover a certain number of cells resembling torula cells, "and occasionally penicillium acrospores." Because he detected these, however, he did not conclude that fungi are generally propagated by such forms.

Dr. Sigerson's observations on the air of factories, &c.

Dr. Sigerson also published the results of his observations in 1870.[3] He examined the microscopic characters of the atmospheric dust deposited in various localities. In that of an iron factory he found a black dust consisting of carbon, ash, and iron. There were no spores or seeds to be detected in it, and no fibres save a few of cotton and of carbonaceous and metallic materials.

In the air of a shirt factory there were filaments of cotton and linen and a few minute ova, not generally dispersed through it, but occurring in small collections; in that of a thrashing mill, there were fragments of chaff and grain and some smut-balls; in that of oat-meal mills, fragments of grain and pericarp, and occasionally spores and acari; and in that of flax-mills, fragments of linen fibres. In stables, scales larvæ and eggs of moths, spores, cuticular scales, fragments of hair, and particles of blood-red colour, were found; in one specimen an acarus occurred. In the dust of a dissecting room, fragments of voluntary and involuntary muscles, portions of white and yellow fibrous tissue, epithelial scales, fat cells, corpuscles, fragments of hair, and abundant particles, were present. In the conclusion of his paper, the author remarks that the lungs have the power of absorbing and assimilating solid matters, and that "old lungs are grey from the dust they take up." He goes on to affirm that "there are no hosts of germs floating about in the atmosphere, and that "air is not much better, but not generally worse, than water" in this respect, and also alludes to a previous paper in which he had mentioned the existence of particles like exudation granules in the atmosphere of a patient suffering from fever.

Dr. Ransome on the organic matter of human breath.

In February 1870, Dr. A. Ransome read a paper before the Literary and Philosophical Society of Manchester "on the organic matter of human breath in health and disease."[4] In this he pointed out the great fallacy present in Mr. Dancer's calculations regarding the prevalence of spores in the air, and proceeded to detail the results of his own experience in regard to the subject. As early as 1857 he experimented on the air by exposing glass plates covered with glycerine in various places and examining the dust deposited on them. By this means he was enabled to detect the presence of organised particles and fibres in the atmosphere of the dome of the Borough gaol. He drew the air of a crowded meeting into distilled water, and 36 hours after found fibres, cellules, nucleated cells surrounded by granular matter, and epithelial scales in it. He also examined common dust and fluid condensed from the breath. In five specimens of the latter very few spores were found, but after a few hours numerous spores and vibriones made their appearance. In a specimen derived from a case of diphtheria, greenish conferval filaments appeared, whilst in others from measles, whooping cough, and phthisis, abundant specimens of small round confervoid cells were present.

---

[1] "The Monthly Microscopical Journal," Vol. V, p. 45.

[2] App. to "Thirteenth Report of the Medical Officer of the Privy Council." Dr. Sanderson had long been familiar with Pouchet's instrument, as Dr. Parkes in the Army Statistical, &c. Reports for 1860, mentions having obtained one from him.

[3] "A microscopic examination of the atmosphere." By George Sigerson, M.D., Ch.M., F.L.S. Member of Royal Irish Academy. "Monthly Microscopical Journal," Vol. IV, p. 93.

"Nature" Vol. I, p. 520. "Popular Science Review," April 1870, p. 209.

At the same meeting Dr. H. Browne stated that he also had made microscopic examinations of the air, and that his results had generally agreed with those of Dr. Ransome.

Mr. Tichborne's experiments on dust.

At the meeting of the British Association in 1870, Mr. C. R. C. Tichborne gave an account of his experiments on the atmosphere of Dublin, in a paper which subsequently appeared in the Chemical News for October of the same year.[1] He stated that street dust was mainly composed of stable manure and triturated stones. His experiments were almost entirely of a chemical nature, and showed the remarkable fact that dust taken at a great height in the air is just as active a ferment as that obtained from an overcrowded building, an apparent anomaly which he suggested might be due in some measure to the extreme levity of spores leading to their presence in large quantities in the higher strata of air.

Examination of dust in New York.

"The Scientific American" of 1870 furnished an account of the examination of air-dust by the New York Officers of Health.[2] Above 100 specimens were obtained by the exposure of glass plates to the air. The same substances were present in all of them, and consisted of street dust, particles of sand and carbon, fibres of cotton &c., fragments of vegetable tissues, granules of starch, three different kinds of pollen grains, and fungal elements. The latter were abundant, ranging in character from *micrococcus* to mycelial filaments. When water was added to the specimens, bacteria and vibriones invariably made their appearance within a few hours.

Selmi on Marsh-Miasm.

In Dr. Angus Smith's "Air and Rain"[3] various extracts are given from an Italian book by Selmi, of Mantua, on Marsh-Miasm, published at Padua in 1870. The author collected the moisture of the air of marshes by freezing, and found that, on standing, it showed a deposit consisting of myriads of spores of algæ and active infusoria.

Balestra on the fever of the Pontine marshes.

The Comptes Rendus for 1870[4] contained an account of Dr. Balestra's observations, which are alluded to by the author just mentioned. His experiments were conducted in Rome. In the air of the Pontine marshes, and even in that of Rome, he found the spores of a minute algal plant, of greenish-yellow colour, transparent and $\frac{1}{1000}$ m. m. in diameter. The plant grows in the water of Pontine marshes, and the spores were most abundantly present in the air in warm weather, and after rain or during a fog, least so at times when it was cool and dry. Dr. Balestra regarded them as the cause of intermittent fevers.

Messrs. Sidebotham and Stodder's experiments.

In the same year Mr. J. Sidebotham recorded the results of observations on the dust in a railway carriage[5] and Mr. Charles Stodder, of Boston, United States, those of others on the dust deposited on the beams of the polishing shop of the United States' Armoury at Spring field.[6]

---

[1] "Chemical News," October 21st, 1870, p. 197. "Dust as a ferment."
[2] "Popular Science Review," July 1870, p. 318.
[3] Page 514.
[4] Quoted in "Monthly Microscopical Journal," Vol. VIII, p. 84.
[5] "Monthly Microscopical Journal," Vol VII, p. 18.
[6] Ibid, Vol. VII, p. 19.

The railway dust contained a very large proportion of fragments of iron, some long, thin, and straight, and many others more or less spherical. Cinders, bright fragments of glass or quartz, bits of yellow metal, grains of sand, bits of coal and opaque white spherical bodies, like those described by Dancer as occurring in the dust of flues, were also present.

Mr. Stodder's specimens contained a few vegetable fibres, some apparently organic fragments and a few crystals, but the great mass was composed of amorphous fragments of iron.

Professor Cohn on Bacteria.

Professor Cohn began at this time to publish the results of his renewed observations on bacteria (Bot. Ztg., 1871, No. 51), and has continued to do so at intervals since, in the proceedings of Silesian Society for National Culture and the "Beiträge zur Biologie der Pflanzen."

His experiments showed that chemical solutions when exposed to air were subject to be invaded by moulds, but usually escaped putrefaction.[1] He affirms that all the bacteria associated with contagious diseases belong to the motionless circular section of bacteria, and are frequently arranged in rosary-like chains. They are also carried into the air in very large numbers by evaporating water. This fact can be easily demonstrated by covering any vessel containing a solution abounding in bacteria with a glass plate. The under-surface of the plate becomes coated with watery vapour, which can be collected into drops by the addition of ether, and on subsequent examination discloses the presence of bacteria.[2]

Dr. Eidam on Professor Rindfleisch's experiments.

Dr. Eidam states that Professor Rindfleisch's experiments also prove "that the atmospheric air usually contains no bacteria,"[3] and affirms that "it is known and satisfactorily proved, that in air enclosed in confined spaces in which decomposing organic substances are present, as also in that over swamps, bacteria, which have been carried up by the watery vapour, occur in abundance."

M. Charles Robin's account of atmospheric dust.

A very full account of atmospheric dust and of the more important questions relative to the nature of its constituents is to be found in Charles Robin's "Traité du Microscope."[4]

The author states that dust is composed of mineral, vegetable and animal particles; the mineral matters being principally calcareous and siliceous; the vegetable ones consisting of the *débris* of the tissues of plants, together with pollen grains, starch corpuscles, and the spores of cryptogams of various species; those of an animal nature being formed of fragments of minute articulate animals, hairs, scales of insects, portions of feathers or down, ovules of acari, &c., while there are also various undetermined azotised corpuscles, some of which are rounded and present the characters of entire dried infusoria. In regard to the fungal cells, he mentions that those occurring most frequently are bi-or multi-sporous thecæ or sporangia, superimposed in the form of brownish clubs and belonging to species of *Puccinia*, *Phragmidium*, &c., together with spores of other arthrosporous fungi, such as *Sporocadus*, *Bactridium*, *Septonema*, and *Cladosporium*.

In another passage, headed "*Des prétendus germes atmosphériques des infusoires*,"[5] he points out that only certain recognised ovules or germs of infusoria are known to exist, and that it is not impossible that such bodies may occasionally be present in the air, seeing that entire dried infusoria, bacillaria, bacteria and globules of pus have been found in dust, but that their presence has never been demonstrated. He then criticises Pasteur's statement regarding the impossibility of distinguishing ova from spores, pointing out that they can be distinguished by means of re-agents, and that even the species to which a spore belongs may frequently be determined, and proceeds "du reste que ce soit la poussière recueillie dans l'air en mouvement ou déposée lentement,

---

[1] "Quarterly Journal of Microscopical Science," April 1872, p. 208.

[2] "Der gegenwärtige Standpunkt der Mycologie," &c. Von Dr. Eduard Eidam, p. 201.

[3] Ibid, p. 199.

[4] Paris. J. B. Baillière et Fils. 1871, p. 528.

[5] Op. Cit., p. 821.

les spores, non plus que les filaments de mycelium, ne forment toujours que le plus petit nombre des corpuscles de celle-là, surtout à coté des fins granules grisâtres, tels que ceux dits *Micrococcus*[1] des grains de fécule, de silice &c., * * *. Quant aux Microphytes dont souvent, en effet le microscope, montre quelques spores, diverses de volume et de structure, rien n'est plus facile que de les distinguer, soit des ovaires ou des ovules des infusoires soit de ces derniers même enkystés ou non; rien n'est plus facile que de voir que les espèces de cryptogames auxquelles elles appartiennent ne dépassent pas une dizaine environ dans chaque expérience et qu'on n'en compte pas une centaine d'espèces, en comparant toutes les expériences faites."

Mr. Blackley's experiments on pollen in the air.

Mr. Blackley,[2] whilst working at the subject of Hay Asthma, made numerous observations on atmospheric particles. He investigated the amount of pollen in the air by exposing slips of glass for a given length of time. A cell coated with glycerine was on each glass, and the number of pollen grains deposited in it during 24 hours was counted. The number of grains present increased from the beginning until towards the end of June, when the grass is chiefly in flower. More pollen was found in hot dry days than in damp weather, and some of the experiments proved that the grains were sometimes carried for long distances through the air. His experiments also proved the presence of more pollen grains in elevated strata of air than in those close to the surface of the ground, a result of much interest when taken in connection with Mr. Tichborne's observations previously quoted, and in regard to the question of the diffusion of the causes of disease by atmospheric currents.

Such are the greater number of the observations on record in regard to this important subject. The majority of them are referable to one of two classes, according to the aim with which they were undertaken, according as they were designed to throw light on the question of the causation of disease on the one hand or on that of the origin of life on the other. The results and conclusions arrived at by their means differ in various respects, and in many cases are directly contradictory. They also form two great classes, according as they respectively affirm or deny the existence of organisms or their germs in the atmosphere. Those of MM. Quatrefages, Pasteur, Samuelson, Angus Smith and others belong to the former section, whilst those of Pouchet may be taken as a type of the latter. Even among those maintaining the existence of atmospheric organisms, however, there are minor differences, some affirming the presence of vegetable organisms only, or almost only (Robin), and others that of infusorial animalcules, their germs and ova, in equal or even in greater proportion (Ehrenberg). Some of these discrepancies are capable of explanation if the various methods of experiment employed by different observers be taken into account, but, before entering farther into a discussion regarding them, the observations which form the subject of the present Report may be detailed, as it is possible that they may throw some light on the matter.

---

[1] When describing the changes occurring in animal fluids after their escape from the body, he defines what the bodies are which he includes under the term "*Micrococcus*," stating that as a primary change there is a gradual formation "de fins granules grisâtres à peine perceptibles, doués d'un mouvement brownien très-vif. Là aussi il faut noter le depôt sur les cellules épithéliales et autres éléments en suspension dans le liquide, de couches uniformes de granules d'un aspect analogue à celui des précedents (*Micrococcus, &c.*) tous contigus et couvrant la surface de ces éléments."

[2] "Experimental researches on the causes and nature of *Catarrhus Æstivus* (Hay Fever or Hay Asthma) by Charles H. Blackley, M. R. C. S., London, 1873, London Medical Record, June 1873, p. 371 (Review).

SECTION II.

SYSTEMATIC OBSERVATIONS ON ATMOSPHERIC DUST IN DEFINITE LOCALITIES.

Observations on atmospheric particles in reference to the occurrence of disease.

A systematic and prolonged series of observations was carried on within the two large Jails in Calcutta, with the view of determining, if possible, whether there were any connection traceable between the prevalence of any special bodies in the atmosphere and the occurrence of particular forms of disease. In regard to this question, it is evident that, even were such a coincidence demonstrated, it would by no means necessarily imply any direct causal connection between the two phenomena. A disease might really be dependent on atmospheric causes, and its prevalence might coincide with the presence of peculiar atmospheric particles, and yet the former be quite independent of the latter. At the same time, even allowing this, in the case of diseases dependent, not on any specific material manufactured within the human organism and transferred from person to person, but on external conditions,—it is quite conceivable that the presence of certain particles in the atmosphere might serve as an index to the probabilities in favour of the prevalence of disease; as the conditions producing the latter, or the special cause of the latter, might also favour development of organisms capable of furnishing characteristic solid particles to the atmosphere. This is a point of view which appears to have been greatly lost sight of by those who have endeavoured to connect the occurrence of diseases, more especially those provisionally termed malarial fevers, with the prevalence of special atmospheric organisms.

Localities selected for observation.

As was previously stated, the observations about to be detailed were limited to the microscopic characters of common atmospheric dust, with the aim of securing data for comparison in future observations on special atmospheres, such as those of buildings, &c. The two jails were selected as localities for observation, on the grounds that their inmates are subject to much more fixed and ascertainable conditions than any class of the outside population, and that their statistics of disease for particular periods are almost absolutely accurate. In regard to any series of observations carried on in definite localities, there is one great disadvantage which cannot in any way be overcome. It is impossible within a fixed period to secure the prevalence of all the diseases in regard to which the enquiry is instituted. The force of this comes out very distinctly in the present instance, for in one of the localities of observation—the Alipore Jail, which in former years used to furnish so many cases of cholera—only 11 cases of cholera and choleraic diarrhœa occurred during the period regarding which particulars are here given, and these were spread over six different months. This is no doubt unfortunate, but the disadvantage appears to be more than counterbalanced by the value of the data furnished by such systematic observations in other ways; for any series of observations confined to the period of prevalence of any special disease are entirely wanting in the essential element of comparison, and are, therefore, almost totally valueless. Unless the characteristics of periods of prevalence can be compared with those of periods of immunity, there are no grounds for coming to any definite conclusions regarding the significance of special phenomena. It is only by a prolonged series of observation, too, that the influence of season on the nature of atmospheric particles can be determined, and until this has been done, there must remain a constant liability to error, due to the occurrence of deceptive coincidences.

System on which observations were conducted.

The observations were fifty-nine in number, the date of the first being the 26th of February, and that of the last the 18th of September 1872. Thirty of them were taken at Alipore and twenty-nine in the Presidency Jail. During the first month there was some slight irregularity in the order in which they were taken, but subsequently observations were taken alternately in each locality. Greater frequency in observation would, no doubt, have been desirable, and daily observations in each would alone have rendered the series perfect, but this was practically out of the question, as it was soon found that regular weekly observations demanded as much time for their thorough and efficient performance as could be given to them without an entire abandonment of other work.

The apparatus employed in obtaining specimens was a slightly modified form of that devised by Dr. Maddox, and described in the account of his experiments. It consisted (*vide* Fig. 1 A) of three thin brass tubes, two of which slipped over the third central one and came into contact with the opposite sides of a projecting rim on its circumference. This rim was formed by the margin of a diaphragm which divided the centre tube into two chambers. It was of sufficient thickness to allow of a spindle passing up through it (B). The latter terminated in a pointed extremity, which came in contact with the upper end of the bearing, and provided for the free rotation of the system of tubes. Round the margins of the diaphragm there was a set of perforations, to allow of the passage of air through it, and, on the centre of its anterior surface, there was a square plate of brass with a slightly projecting rim on its lower margin. The anterior of the two lateral tubes was provided with an expanded orifice, and contained a small, finely-pointed funnel in its interior; the pointed extremity opening immediately in front of the centre of the diaphragm-plate. The posterior tube was quite simple, and had a good sized fish-tail vane fitted into a slit in its extremity.

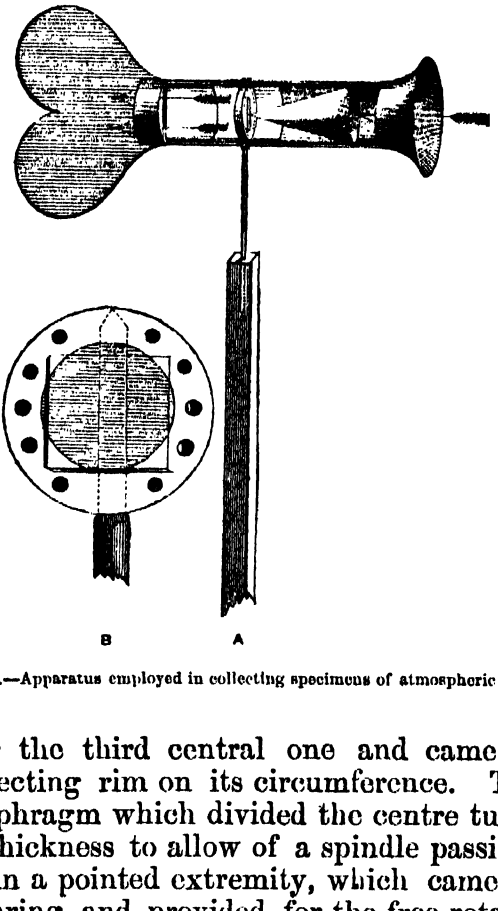


FIG. 1.—Apparatus employed in collecting specimens of atmospheric dust.

Description of apparatus for collection of atmospheric dust.

At each of the localities selected as sites for observation, a stout teak-wood post about 4½ feet in height was firmly fixed into the ground. A brass spindle fitting the bearing in the diaphragm of the apparatus was screwed into the top of each of them, and served as an axis of rotation, securing the exposure of the expanded orifice of the apparatus to the prevailing currents of wind. Preparatory to taking any observations, the apparatus was well washed with spirits of wine and heated over a spirit lamp. A microscopic cover-glass of suitable size was then carefully cleaned, and one surface smeared with pure glycerine. A minute drop of the same medium was placed upon the diaphragm-plate, and the dry surface of the cover-glass applied to it, leaving the smeared surface exposed. The glycerine on the diaphragm secured the glass adherent in a vertical position, and did away with any necessity for a spring, the use of which was found

Method in which it was employed.

inconvenient from its coming in the way and intercepting more or less of the atmospheric dust. The anterior tube was next slipped on, bringing the pointed extremity of the interior funnel immediately in front of the glass, and the whole apparatus was finally set on the spindle, where it remained during a period of twenty-four hours.

Sites of apparatus in the two localities selected.

In the Presidency Jail the supporting post was placed within the largest enclosure, on an open space of grass to the east of a large tank in which the native prisoners bathe. The most convenient locality at Alipore was found to be the compound of the jail hospital, and the post was accordingly fixed there, to the north of the hospital tank between it and the tidal nullah, from which it was separated by the posterior wall of the enclosure. The mouth of the apparatus, when *in situ*, was at a level of about 5 feet from the ground, that elevation being chosen as likely to correspond with the stratum of air breathed by a man whilst in an erect position, and, therefore, likely to show the nature of the atmospheric particles commonly entering the respiratory passages.

Method of examining and recording characters of specimens.

At the close of twenty-four hours the apparatus was taken down, the anterior tube removed, and the cover-glass transferred to a clean slide; a little fresh glycerine being added if necessary. The upper surface was then carefully cleaned of any remains of glycerine, and the preparation was ready for examination. The latter consisted in systematically working over every portion of it, noting and recording the general features presented by it, and in the majority of instances, where the numbers present were not too great, in drawing to scale all the spores, fungoid and algoid cells, pollen grains and any bodies resembling the cysts or ova of infusoria which could be detected. This necessarily involved the expenditure of much time, but it was very soon found to be the only satisfactory means of preserving a distinct record of the characters of individual specimens of such a nature as to permit of the comparison of one with another. These illustrations have been admirably reproduced in the accompanying plates prepared in the Surveyor General's Office, furnishing a representation of the characters of the bodies present in the various experiments, advantageously substituting a large amount of descriptive writing, which would otherwise have been necessarily introduced without in the end so satisfactorily affording the desired information as is done by their means. As a general rule, the magnifying power employed in the microscopical examination of the preparations was one of 400 diameters, but wherever necessary in the examination of specimens, such as minute fungoid cellules or bacteroid bodies, this was replaced by others ranging from 800 to 1,000 diameters.

TABLE I.—*Observations at*

Date.	Wind.		Rainfall of 3 days.	Mean degree of humidity.	Number of spores, &c., present.	Statistics of disease for 3 days previous.					
	Prevailing direction.	Velocity. Miles.				Number of prisoners in Jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.
February 29	S. S. W. & S.	133·5	0·0 0·0 0·0	0·75	237	3,012	3	2	...	1	...
March 7	S. by W., E. S. E. & S. S. W.	122·5	0·21 0·0 0·0	0·72	107	2,957	2	5	...	3	...
„ 14	S. W. & W. N. W.	98·8	0·0 0·0 0·0	0·60	224	2,938	2	7	...	3	...
„ 18	W. S. W. & W. N. W.	110·8	0·0 0·0 0·0	0·59	211	2,941	3	1	...	4	...
„ 25	S. & S. S. W.	161·0	0·0 0·0 0·0	0·68	137	3,003	3	5	...	5	...
April 1	S. by E. & variable	81·2	0·0 0·39 0·0	0·79	84	3,028	1	7	...	4	...
„ 14	S. & S. by W.	133·1	0·0 0·0 0·0	0·64	75	3,032	7	...	...	13	2
„ 22	S. by W. & S. S. W.	315·8	0·0 0·0 0·05	0·71	81	3,062	1	5	...	7	5
„ 28	S. & S. by W.	208·3	0·0 0·0 0·73	0·70	42	3,116	1	2	...	10	7
May 5	S. by W. & S. S. W.	312·2	0·0 0·0 0·0	0·70	108	3,226	2	...	...	8	15
„ 12	E. S. E. & S. S. W.	167·2	0·0 0·0 0·0	0·73	67	3,244	1	2	...	32	5
„ 22	W. S. W. & S. W.	143·7	0·0 0·12 0·0	0·73	155	3,265	...	...	...	31	1
„ 27	S. by E. & S.	196·5	0·0 0·0 0·0	0·72	83	3,237	1	2	...	14	1
June 3	S. by E. & S.	345·3	0·0 0·0 0·0	0·68	62	3,296	2	1	...	13	...
„ 9	S. by W. & S.	212·9	0·07 0·38 0·67	0·81	149	3,310	5	5	...	9	...
„ 16	S. S. E. & S.	151·2	0·33 0·09 0·0	0·81	195	3,340	3	2	...	4	...
„ 23	E. by S. E. & S. S. E.	214·6	0·17 0·17 0·05	0·88	345	3,377	1	2	...	6	...
„ 30	E. N. E. & E. by N.	385·2	0·13 0·23 0·64	0·89	272	3,388	5	3	...	3	...
July 7	S. by E. & S.	24·6	0·0 0·0 0·0	0·82	90	3,388	3	1	...	11	...
„ 12	Variable	109·9	0·26 0·13 0·17	0·91	232	3,401	8	3	4	5	...
„ 21	S. S. E. & S.	66·2	0·13 0·0 0·40	0·87	123	3,308	8	4	...	13	...
„ 28	S. S. W. & S. W.	173·4	0·04 0·03 0·39	0·90	292	3,288	4	...	...	14	...
August 4	S. by E. & S.	127·8	0·19 0·41 0·34	0·88	137	3,353	...	2	...	9	...
„ 11	S. by W. & S. S. W.	72·2	0·26 0·03 0·0	0·88	73	3,324	...	2	...	10	...
„ 18	S. W. & S. S. W.	67·0	0·0 0·0 0·0	0·81	380	3,379	1	9	...	11	...
„ 25	S. E.	109·8	0·09 0·10 0·94	0·91	213	3,401	4	3	...	14	...
September 1	S. S. W.	154·2	0·98 1·05 0·0	0·98	116	3,487	1	4	...	10	...
„ 8	W. S. W. & W. by S.	22·5	0·19 0·0 0·0	0·83	280	3,547	1	6	...	12	...
„ 15	S. S. E. & E. S. E.	93·2	0·20 0·20 0·0	0·83	81	3,537	8	4	...	8	...

the Presidency Jail.

STATISTICS OF DISEASE OF THE DAY.						STATISTICS OF DISEASE FOR 3 DAYS AFTER.						STATISTICS OF DISEASE FOR THE WEEK.						PLATE AND FIG.	
Number of prisoners in Jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.	Number of prisoners in Jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.	Number of prisoners in Jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.		
993	2	3	...	3	...	2,959	1	1	...	2	...	6,964	6	6	...	6	...	I	1
993	2	...	...	2	...	2,950	5	8	...	4	...	6,900	9	8	...	9	...	"	2
984	4	2	...	...	...	2,941	3	1	...	4	...	6,863	9	10	...	7	...	"	3
980	1	1	...	3	...	2,958	4	1	...	3	...	6,879	8	3	...	10	...	"	4
991	5	1	...	2	...	3,070	3	2	...	12	...	7,064	11	8	...	19	...	"	5
1,007	...	...	...	3	...	3,032	1	2	...	6	...	7,067	2	9	...	13	...	III	1
1,010	1	1	...	3	1	3,038	5	1	...	12	5	7,080	13	2	...	28	8	"	
1,025	...	4	...	6	2	3,060	...	4	...	17	7	7,147	1	13	...	30	14	"	3
1,074	...	2	...	5	2	3,232	3	2	...	6	28	7,422	4	6	...	21	37	"	4
1,078	...	...	...	3	1	3,227	2	...	...	16	9	7,531	4	...	...	27	25	V	1
1,084	2	2	...	1	...	3,248	...	1	...	21	...	7,576	3	5	...	54	5	"	1
1,091	1	...	...	11	...	3,247	...	...	...	20	1	7,603	1	...	...	62	2	"	3
1,074	...	...	...	6	1	3,234	1	7	...	12	2	7,645	2	9	...	32	4	"	4
1,102	...	...	...	5	...	3,313	2	3	...	16	1	7,711	4	4	...	34	1	VII	1
1,102	1	1	...	...	...	3,304	2	1	...	11	...	7,716	8	7	...	20	...	"	2
1,114	...	1	...	...	...	3,360	3	5	...	14	...	7,814	6	8	...	18	...	"	3
1,131	...	...	...	...	...	3,380	1	2	...	3	...	7,888	2	4	...	9	...	"	4
1,123	...	...	1	...	1	3,364	4	2	4	5	...	7,875	9	5	5	8	1	IX	1
1,134	1	2	2	1	...	3,400	5	4	2	4	...	7,922	9	7	4	16	...	"	2
1,132	2	...	...	5	...	3,403	4	3	2	11	...	7,936	14	6	6	21	...	"	3
1,083	...	...	...	1	...	3,277	5	3	...	13	...	7,668	8	7	...	27	...	"	4
1,095	1	...	...	4	...	3,325	5	7	...	10	...	7,708	10	7	...	28	...	XI	1
1,110	1	...	...	1	...	3,349	4	1	...	5	...	7,812	5	3	...	15	...	"	2
1,110	...	1	...	1	...	3,377	1	4	...	11	...	7,811	1	7	...	22	...	"	3
1,128	...	1	...	5	...	3,398	...	8	...	17	...	7,905	1	18	...	33	...	"	4
1,139	...	1	..	3	...	3,436	3	4	...	10	...	7,976	7	8	...	27	...	XIII	1
1,179	...	2	...	6	...	3,536	3	3	...	23	...	8,202	4	9	...	39	...	"	2
1,176	...	3	1	2	...	3,534	1	5	...	14	...	8,257	2	14	1	28	...	"	3
1,179	...	...	...	4	...	3,544	4	6	...	13	...	8,260	7	10	...	25	...	"	4

TABLE II.—*Observations*

DATE.	WIND.		Rainfall of 3 days.	Mean degree of humidity.	Number of spores, &c., present.	STATISTICS OF DISEASES FOR 3 DAYS PREVIOUS.					
	Prevailing direction.	Velocity. Miles.				Number of prisoners in Jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.
February 26	W. S. W. & S. W.	93·4	0·0 0·0 0·0	0·67	117	6,218	5	3	...	1	...
„ 27	S. S. W. & S. W.	67·7	0·0 0·0 0·0	0·68	81	6,231	7	3	1	2	...
March 4	W. & W. S. W.	122·0	0·0 0·0 0·0	0·58	78	6,188	4	2	1*	1	...
„ 11	S. W.	185·9	0·0 0·0 0·0	0·66	269	6,149	1	...	...	5	...
„ 20	S. S. W. & S. by W.	98·0	0·0 0·0 0·0	0·68	94	6,220	7	2	...	1	...
„ 28	S. S. W. & S. by W.	151·8	0·0 0·0 0·0	0·68	283	6,417	5	4	...	2	...
April 3	W. S. W. & S. S. W.	128·7	0·0 0·02 0·34	0·74	73	6,284	4	2	...	3	...
„ 17	Variable	99·1	0·0 0·0 0·02	0·52	169	6,198	3	...	...	10	...
„ 24	S. E. & S. S. W.	205·1	0·05 0·28 0·0	0·75	233	6,262	4	2	...	2	6
„ 30	S. S. W. & S. by W.	277·9	0·73 0·0 0·0	0·72	163	6,219	5	4	...	4	2
May 8	S. S. E., S. by W. & S.	102·8	0·0 0·0 0·0	0·73	94	6,393	1	...	...	7	2
„ 15	S. S. W. & S. by W.	290·5	0·0 0·0 0·08	0·68	107	6,396	2	4	...	3	2
„ 24	S. & S. by W.	193·0	0·0 0·04 0·0	0·72	111	6,583	1	1	...	1	1
„ 29	S. by W. & S.	182·2	0·0 0·0 0·0	0·70	112	6,530	4	4	...	5	5
June 5	S. & S. by W.	343·2	0·0 0·33 0·0	0·71	144	6,542	5	6	...	2	4
„ 12	S. by E., S. W. & S. S. E.	183·0	0·10 0·03 0·64	0·87	272	6,618	7	4	1	10	11
„ 20	S. by E. & S. S. E.	94·2	0·0 0·0 0·66	0·74	72	6,580	10	1	...	3	7
„ 26	E. S. E. & E. by N.	207·0	0·92 0·4 0·04	0·90	133	6,482	12	7	...	1	3
July 8	S. S. W.	327·0	0·13 0·07 0·0	0·85	231	6,593	11	3	...	5	4
„ 10	Variable	255·6	0·08 0·11 0·26	0·84	267	6,672	16	10	..	1	8
„ 17	S. & S. by W.	62·6	0·12 0·13 0·08	0·85	35	6,706	10	12	...	4	8
„ 24	E. & S. S. E.	116·5	0·04 0·25 0·63	0·89	323	6,709	17	15	...	...	2
„ 31	W. & S.	58·8	0·27 0·02 0·07	0·85	102	6,665	6	5	...	...	3
August 7	S. S. E. & S.	153·2	0·56 0·25 0·51	0·90	318	6,699	5	10	1*	2	3
„ 14	S.	65·3	0·35 2·42 2·20	0·90	169	6,710	7	10	...	3	1
„ 21	W. by S. & S. S. W.	45·0	0·30 0·58 0·23	0·91	262	6,702	10	6	...	7	1
„ 29	S. & S. E.	91·5	0·0 0·0 0·04	0·88	110	6,678	9	8	...	3	1
September 4	S. W. & S. S. W.	148·6	0·0 0·75 0·67	0·83	288	6,667	3	11	...	3	3
„ 11	N. W. & N. by W.	253·4	0·0 0·0 1·36	0·80	174	6,657	10	6	...	8	3
„ 18	S. E. & Variable	65·2	0·12 0·0 0·50	0·76	71	6,748	4	2	...	...	...

* Cases marked thus are cases of choleraic diarrhœa.

at Alipore.

STATISTICS OF DISEASES FOR THE DAY.						STATISTICS OF DISEASES FOR 3 DAYS AFTER.						STATISTICS OF DISEASES FOR THE WEEK.						PLATE AND FIG.	
Number of prisoners in Jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.	Number of prisoners in Jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.	Number of prisoners in jail.	Cases of Diarrhœa.	Cases of Dysentery.	Cases of Cholera.	Cases of Ague.	Cases of Dengue.		
2,071	4	...	1	...	...	6,210	4	1	...	...	...	14,499	13	4	1	1	...	II	1
2,061	1	1	...	...	...	6,187	7	...	...	...	...	14,479	15	4	1	2	...	„	2
2,061	2	...	...	1	...	6,167	4	2	...	2	...	14,416	10	4	1*	4	...		3
2,060	3	1	...	1	...	6,162	7	8	1*	4	...	14,871	11	4	1*	10	...	,	4
2,090	2	3	...	1	...	6,281	2	...	...	4	...	14,600	11	5	...	6	...		5
2,133	2	3	...	2	...	6,389	4	3	...	1	...	14,939	11	10	...	5	...	„	6
2,058	2	...	...	1	...	6,163	2	2	...	3	...	14,485	8	4	...	7	...	IV	1
2,077	2	1	...	3	...	6,263	4	1	...	14	...	14,538	9	2	...	27	...	„	2
2,121	...	...	...	...	...	6,205	3	4	...	10	2	14,588	7	6	...	12	7	„	3
2,074	1	...	...	4	2	6,225	2	3	...	5	3	14,518	8	7	...	13	7	„	4
2,125	...	1	...	1	...	6,404	1	1	...	4	3	14,922	2	2	...	12	5	VI	1
2,132	1	1	1*	1	3	6,444	4	7	...	...	2	14,972	7	12	1*	4	7	„	
2,179	1	...	...	...	1	6,545	3	2	...	5	3	15,307	5	3	...		5	„	3
2,172	3	1	...	...	...	6,526	4	6	...	10	3	15,228	11	11	...	15	8	„	4
2,175	3	1	...	1	2	6,578	5	2	...	...	11	15,298	13	9	...	8	17	VIII	1
2,202	4	3	1	5	1	6,645	2	2	1*	4	...	15,465	13	9	3†	19	12	„	2
2,167	3	...	...	...	...	6,499	7	4	...	...	4	15,246	20	5	...	3	11	„	3
2,181	4	1	...	2	1	6,590	18	6	...	1	7	15,253	34	14	...	4	11	„	4
2,195	2	2	...	...	3	6,605	12	10	...	...	..	15,393	25	15	...	5	7	X	1
2,231	3	5	...	...	1	6,692	8	7	...	...	5	15,595	27	22	...	1	14	„	2
2,241	7	1	...	...	1	6,720	8	7	1*	2	5	15,667	25	20	1*	6	14	„	3
2,232	3	3	...	1	...	6,666	10	9	...	1	2	15,607	30	27	...	2	4	„	4
2,215	...	5	...	...	1	6,675	3	1	...	2	...	15,555	9	11	...	2	4	XII	1
2,239	8	5	...	...	...	6,718	6	5	1*	3	5	15,651	19	20	2*	5	8	„	2
2,234	6	...	...	...	1	6,678	7	11	...	...	2	15,622	20	21	...	3	4	„	3
2,241	1	...	...	4	1	6,728	5	5	...	2	...	15,671	16	11	...	13	2	„	4
2,213	...	2	...	...	..	6,649	8	3	...	...	...	15,540	17	18	...	8	1	XIV	1
2,220	3	1	...	3	3	6,655	11	7	...	3	5	15,542	17	19	...	9	11	„	2
2,222	1	2	...	3	2	6,712	3	7	...	1	1	15,591	14	15	...	12	6	„	3
2,232	...	1	...	1	...	6,698	2	5	...	4	...	15,678	6	8	...	5	...	„	4

* Choleraic diarrhœa.

† One, a case of choleraic diarrhœa.

Description of tables and diagrams.

In order as much as possible to reduce some of the more important results of the entire series of experiments to a convenient and intelligible form, the accompanying tables and diagrams have been drawn up, containing a summary of them. A separate table has been given for each locality rather than a conjoint one for both, because one of the latter nature would not have so readily afforded information in regard to points connected with the local distribution of disease according to time. The first column in each table contains the date of observation, the second the prevailing direction of the wind, the third the velocity of the wind, the fourth the rainfall, the fifth the mean degree of humidity, and the sixth the number of fungoid and algoid cells and of pollen grains present, while the rest are occupied with statistics relative to jail population and prevalence of disease. The meteorological data are derived from the "Results of the meteorological observations taken at the Surveyor General's Office," and published weekly in the *Calcutta Gazette,* and none of the columns of the table containing them appear to require any special explanation save the fourth. This contains the rainfalls for three successive days, corresponding to each period of observation; the rainfall of the day previous to that of observation is registered, because it may be supposed to exert an important influence for some time after its occurrence, and that of the day following, because the periods of observation and those for which rainfall is registered did not coincide, so that a fall occurring on the day subsequent to that from which an observation is dated might in many instances have partially or even totally occurred during the period in which the apparatus was exposed. Of the four diagrams the two upper ones show the relations existing between the velocity of the wind and the number of spores, &c., collected, and the two lower refer to the latter phenomenon and the prevalence of certain forms of disease.

Coarse dust: its amount at various times.

Before proceeding to the discussion of any of the special questions in connection with the various bodies occurring in these preparations, some general points regarding the whole series may be briefly alluded to. The amount of dust visible to the naked eye varied extremely; in some cases being almost or entirely inappreciable, in others present in considerable quantity, whilst in one or two cases in which dust-storms had occurred during the period of exposure, the amount was so great as actually to form a small heap opposite the orifice of the funnel, and to require the addition of a considerable quantity of fresh glycerine ere contact between the slide and cover could be secured. The relative proportions of the various classes of microscopic constituents present also varied, an increase in one of them being by no means necessarily or invariably associated with an increase in others. For example, dry windy weather caused a great increase in the amount of silicious, carbonaceous, and amorphous particles and other *débris,* but certainly did not cause a proportionate increase in the number of spores and other fungal and algal cells. On the other hand, the occurrence of moist weather was accompanied by a great diminution in the quantity of the former without in many cases appearing to influence the numbers of the latter at all, or in a similar direction. Where a very large quantity of coarse dust and amorphous matter is present, it is no doubt often difficult to determine the absolute numbers of the spores, &c., in a preparation, but it is, at all events, easy to see that the increase of them, if it exist, is not proportional.

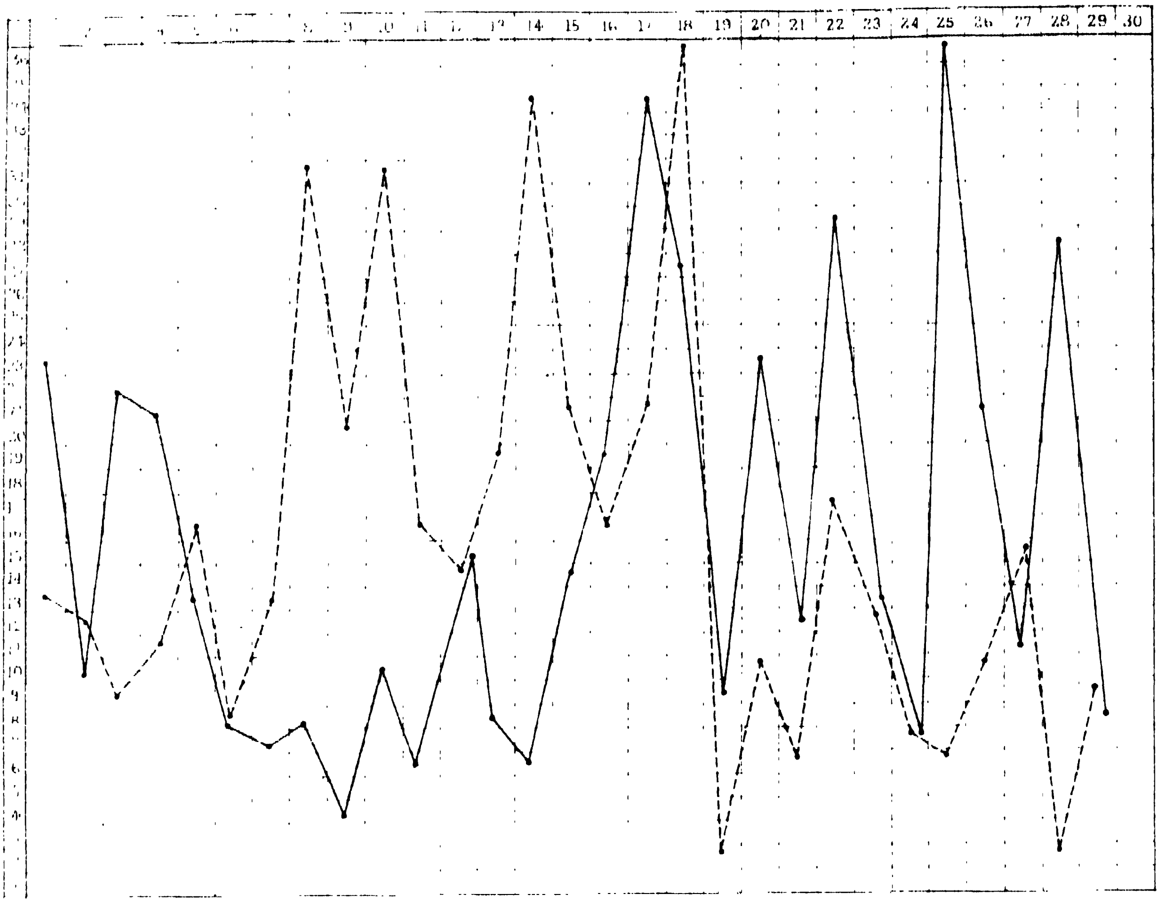
Influence of moisture on coarser constituents of atmospheric dust.

The influence of moisture in diminishing the numbers of the coarser atmospheric particles is evident when the following statement is compared with the tables at pages xxii, xxiv.

Amount of dust visible to the naked eye in 59 Preparations.

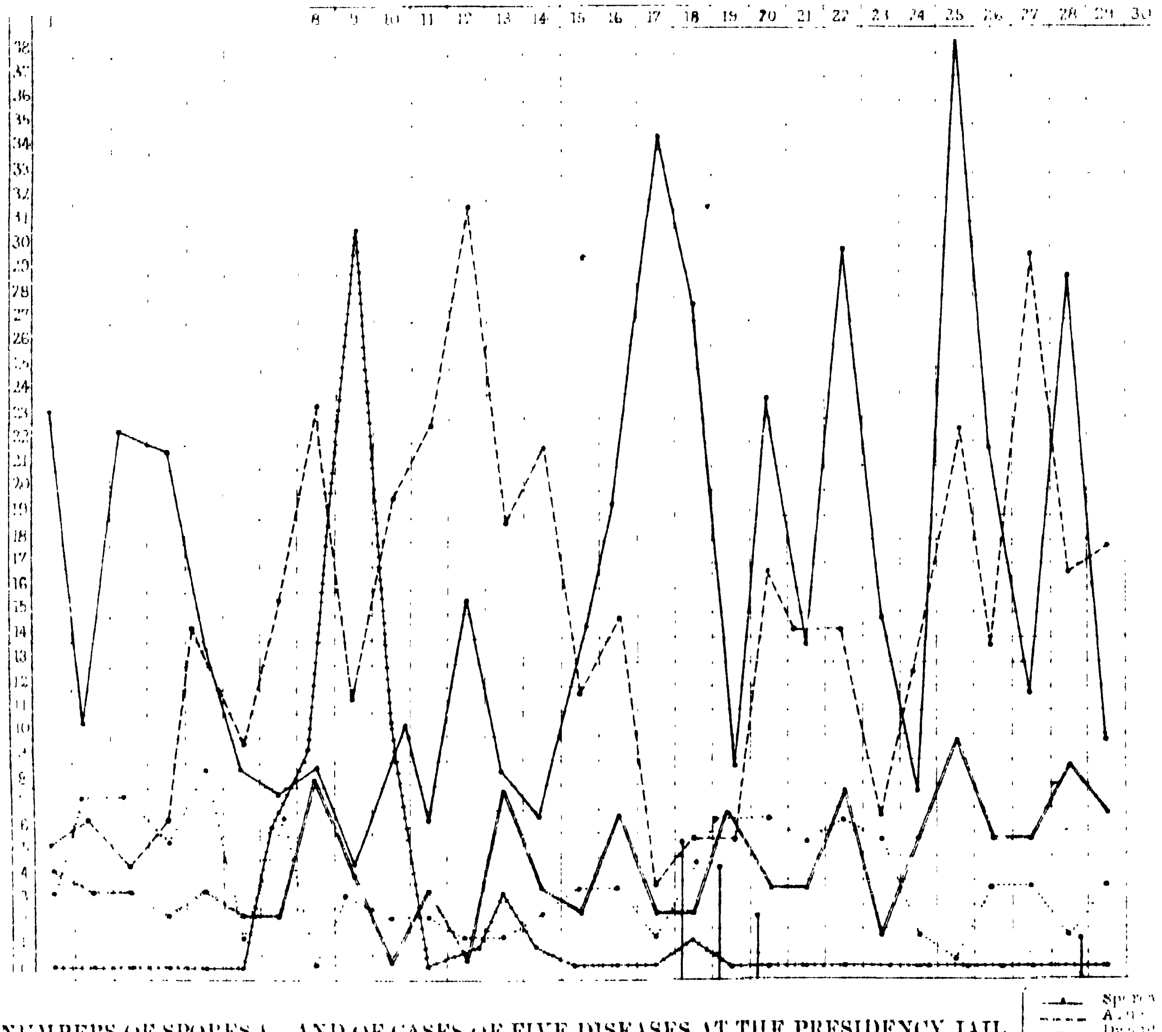
Of 29 Preparations from February 28th to June 5th.	Of 30 Preparations from June 9th to September 18th.
16 contained an abundance.	3 contained an abundance.
13 „ a little.	3 „ a little.
	19 „ a mere trace.
	5 „ none.

DIAGRAM I.



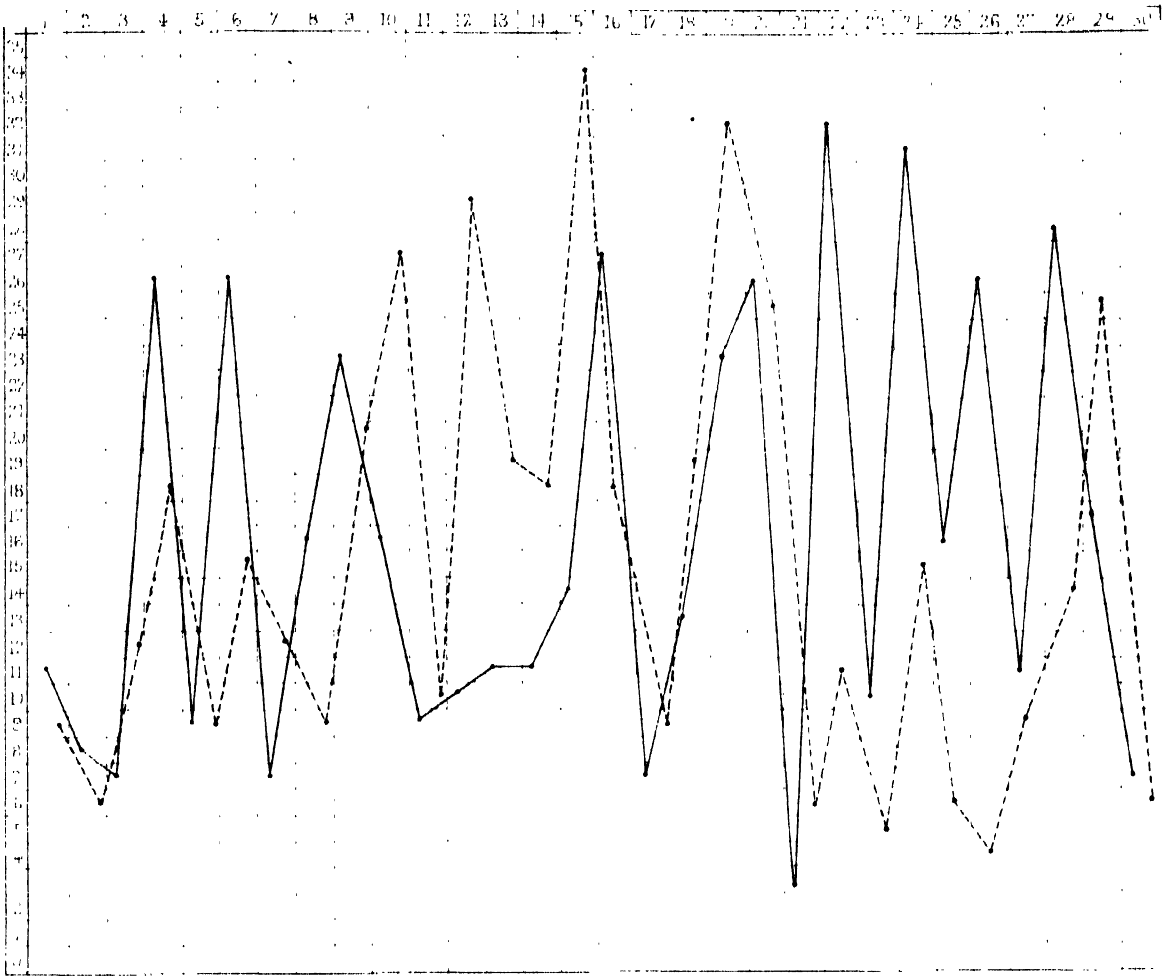
VELOCITY OF WIND AND NUMBERS OF SPORES &c. AT THE PRESIDENCY JAIL { ---- Velocity of wind

DIAGRAM II.



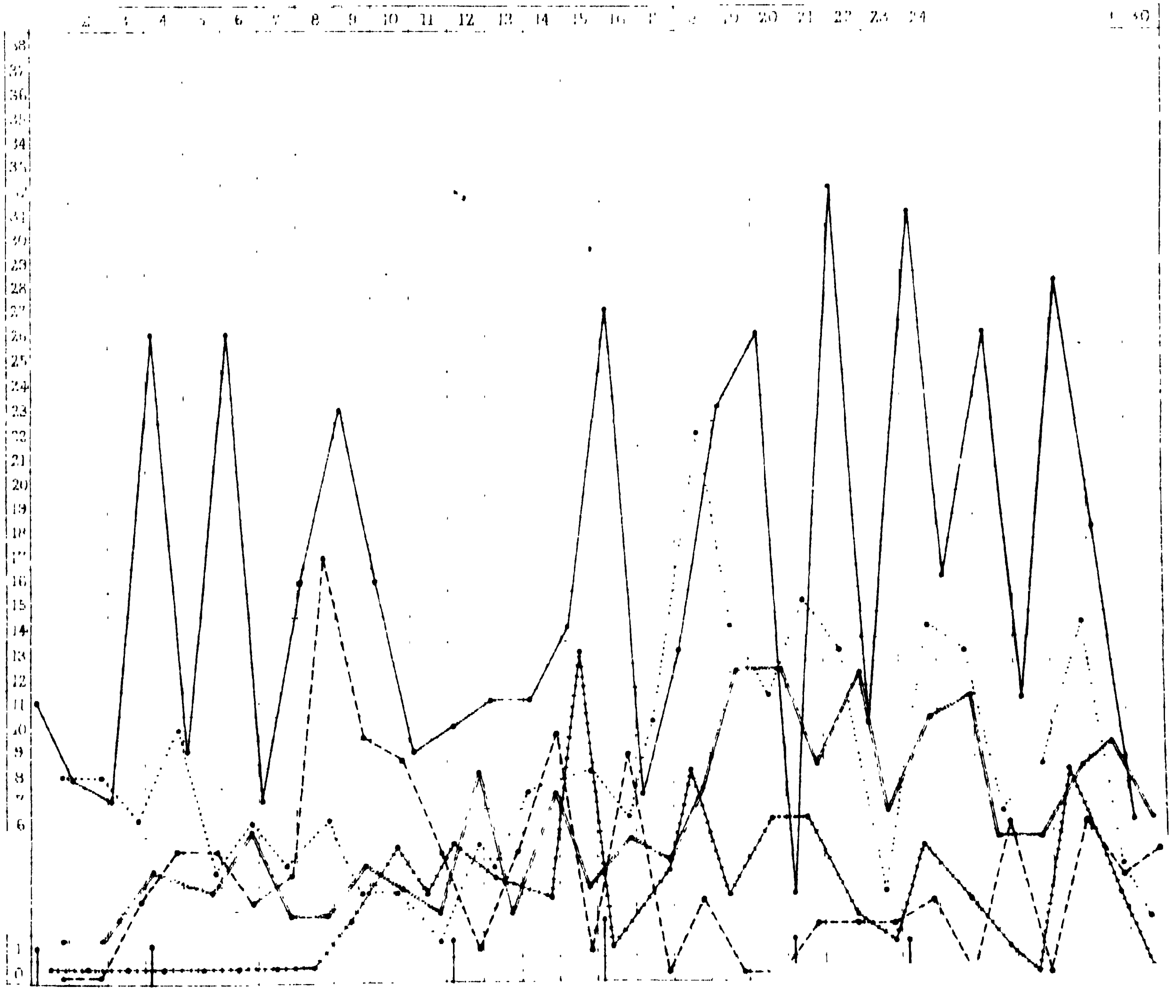
NUMBERS OF SPORES &c. AND OF CASES OF FIVE DISEASES AT THE PRESIDENCY JAIL { Spores
Ague
Dysentery
Diarrhœa
Dengue
Cholera

DIAGRAM



VELOCITY OF WIND AND NUMBERS OF SPORES &c. AT ALIPORE

DIAGRAM IV.



NUMBERS OF SPORES &c. AND OF CASES OF FIVE DISEASES AT ALIPORE

Turning now to the tables, it will be seen that rain is registered on 10 periods of observation up to the 5th June, and on 28 from that date to the 18th September, inclusive. On comparing the total rainfalls of the two periods, the difference comes out even more strongly, for, whilst the total rainfall of the former only amounted to 4·36 inches, that of the second amounted to 32·26 inches; rain falling on 15 of the 101 days of the one, and on 77 of the 105 days included in the other. While, however, moisture exerts such a decided influence on the amount of the coarser inorganic and amorphous particles in the atmosphere, it does not appear to affect that of the spores, &c., in the same manner, but, on the contrary, rather tends to increase it, for it will be seen that the number of such bodies present exceeded the average in 17 instances during the moist period and only in 8 during the dry one. This statement must not be regarded as implying that actual heavy rainfall does not temporarily diminish the number of spores and similar cells in the air, for there can be no doubt that it really does so; but, while the effect on the inorganic and amorphous constituents persists until the drying up of the surfaces from which they are derived, spores, &c., at once begin to be developed and added to the air anew, and in many cases, in larger numbers than previously, due to the stimulus afforded by the presence of moisture to the growth of the fungi from which they are derived.

Velocity of wind: no evident influence on numbers of spores, &c.

Velocity of wind seems to exert as little influence on the numbers of spores and similar cells in the atmosphere as moisture, for during the first and dry period it exceeded the average 14 times, and during the second moist period only 9 times, and yet, as previously mentioned, the number of preparations obtained during the latter containing spores above the average, was more than double that of similar preparations belonging to the former period. A low velocity, too, in many instances was coincident with a high number of spores and *vice versâ*, as appears in diagrams I and III, showing the relations of velocity and number graduated by tens. At the same time, in a considerable majority of instances, a rise or fall in velocity was accompanied by a corresponding rise or fall in the number of spores. This occurred in 33 cases against 24, but does not seem to imply any absolute increase in number dependent on increased velocity; for as the quantity of air traversing the aeroscope in a given time necessarily augments with augmented velocity of wind, a greater number of spores may be deposited in it in a given time, even coincident with the presence of a diminished number in a given bulk of air. No special influence of direction of wind can be made out from the tables, but this may, perhaps, be partially due to the comparatively slight amount of variation occurring during the periods of observation.

Varying influence of velocity of wind and of moisture readily explicable.

The above results regarding the influence of moisture and velocity of wind are precisely those which might rationally be expected on a little consideration of the subject. At first sight it might be supposed that all the constituents entering into the composition of atmospheric dust would be affected alike by alterations in the prevailing conditions of velocity of wind and of moisture. When, however, it is borne in mind that local conditions favouring or hindering the growth of fungi and similar organisms must determine the supply of cells derived from them, it becomes clear that velocity of wind *per se* can have no effect, and that moisture should tend rather to increase than to diminish their numbers, so long as it is associated with a suitable temperature. The amount of free inorganic particles and mere *débris* in any locality is dependent on conditions of dryness, and the extent to which they are raised into the atmosphere on conditions of velocity of wind; but the case is entirely different in regard to bodies, the supply of which is not regulated by mere mechanical conditions, but also by all the complex conditions affecting the growth and development of the organisms to which they belong.

Constituents most common and constant in atmospheric dust.

Proceeding next to a consideration of the special elements appearing as constituents in these preparations of atmospheric dust, it may be stated that those of most constant occurrence were the following:—particles of silica: amorphous granular masses: carbon: lime: starch corpuscles: cells, hairs and other fragments of vegetable tissues: fibres of cotton, &c: hairs and scales of insects: oil globules: pollen grains: spores and cells of fungi and algæ. Among the rarer constituents were *Acari*, specimens of which occurred in four preparations. They were more or less disintegrated in most cases, and did not appear to have entered the preparations in a living condition, so that they had probably really been introduced by the air and had not entered by creeping down the tube of the aeroscope. Distinct bacteria were observed in one or two instances only, and then in very small numbers, but all the preparations abounded more or less in minute monad-like molecules and globules of an undefined nature. Bodies which could be supposed to represent or belong to the higher infusoria hardly ever occurred, and no entirely unequivocal specimen was ever detected, as will be manifest on an examination of the plates.

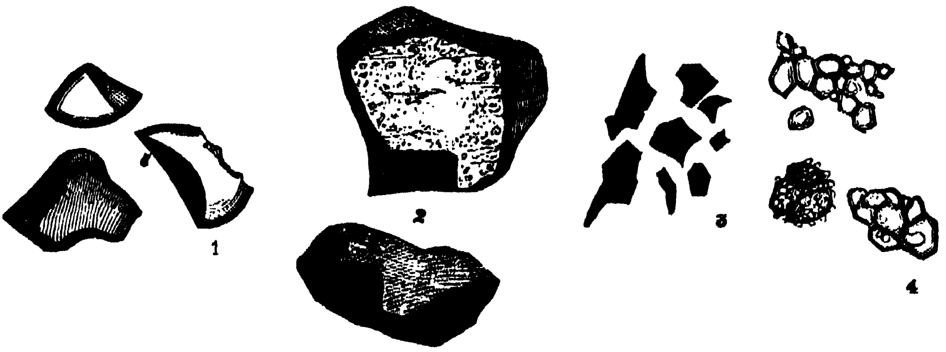


Fig. 2.—Inorganic elements in atmospheric dust: 1 and 2, silica, 3, carbon, 4, lime. Magnified 400 diameters.

Silica and amorphous particles.

The amount of silica and amorphous matter varied greatly in different instances, corresponding closely with the amount of coarse dust visible previous to microscopic examination. Carbon was rarely absent, and sometimes occurred in considerable amount, appearing either in the form of minute, angular fragments (*vide* Fig. 2) or of amorphous granules. Lime was present in many instances; sometimes in the form of granules, which were apparently formed of groups of fine needle-shaped crystals. These granules were of a pale yellowish colour, were sometimes collected into irregular masses (*vide* Fig. 2), and frequently formed an encrustation on the surface of fragments of silica from which they were separated by the addition of dilute-acids, which dissolved them with effervescence.

Starch and other vegetable debris.

Starch corpuscles occurred in all save five of the preparations, confirming Pouchet's observations regarding their constant presence in the neighbourhood of inhabited localities. In the majority of cases only one or two were detected, but in a few they were abundant. Wheat starch appeared to be the most prevalent form, but granules of rice were occasionally observed, and, in one or two instances, a few corpuscles seemingly belonging to some pulse, probably dhâl, were present. The fragments of vegetable *débris* were naturally very various, but, as a general rule, hairs and fragments of epidermis were most abundant. In some preparations collected during periods of violent wind, particles of woody tissue of considerable size occurred. Portions of cotton fibres were frequently observed, and particles of jute also were not uncommon. Hairs and scales of insects were present in many specimens, and in several cases were clearly traceable to the entrance of insects into the apparatus in order to deposit their ova in the anterior tube (*vide* Experiment II, Section III). In about one-half of the preparations, globules of various sizes, and apparently of an oily nature, were present. In those in which *Acari* also occurred they were peculiarly abundant, apparently due to their formation during the processes of decomposition taking place in the bodies of the animals.

Pollen.

Pollen grains were present in 52 of the 59 preparations, and in some were present in considerable numbers. Almost all the specimens observed are represented in the plates, and it will be seen that they belong to one or two forms only. The most abundant and constant of these were two varieties of circular cells, one distinguished from the other by the thickness and firm aspect of its coats, and both belonging to common species of grass (*vide* Fig. 3, 1 and 2).

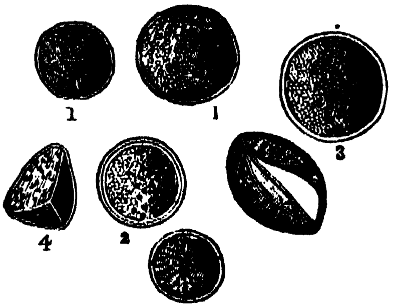


Fig. 3.—Pollen Grains: 1, Pollen of Ooloo Grass (Imperata Cylindrica): 2, Pollen of Doob Grass (Cynodon dactylon): 3, Pollen of another common grass: 4, Pollen of a Cyperus. Magnified 400 diameters.

A few specimens of the pollen grains of other grasses occurred, also a few resembling those of *Epilobium* (Plate I, Fig. 5), two apparently belonging to *Poinciana regia* (Plate V, Figs. 1 and 2,) and one seemingly of some liliaceous plant (Plate VII, Fig. 1). In the specimen collected on the 30th April a small mass of peculiar grains was present of a form only observed on one other occasion (*vide* page xxxiii). This is shown in the figure illustrating the specimen, under a power of about 120 diameters, with a portion of one of the grains under one of 400 (*vide* Plate IV, Fig. 4). The largest number of grains observed in any preparation was in that of the 28th March,—a dry dusty day. Forty-one specimens are figured in the corresponding illustration, but the number actually present was somewhat greater. They were much more abundant as a rule in the preparations belonging to the period from the 26th of February to the beginning of June than in those obtained during the rains, the average proportions for the two periods being as 3 to 1, and the actual excess in most of the specimens of the first period being very much greater than these numbers would indicate, as the average for the second was almost doubled by two days in the beginning of July, in which specimens abounded in the preparations. The preponderance in the former period is no doubt mainly to be ascribed to the fact that the grasses, which throughout were the constant and principal contributors, chiefly flower during that time, and also partially to the destructive effects of moisture on the pollen grains in the latter period. The observation of the presence of pollen grains in the air is one of long standing, but has acquired fresh importance of late in connection with Mr. Blackley's observations on their action in exciting Hay Asthma, and it is not devoid of interest to note their presence in the atmosphere of localities, such as Calcutta, in which the occurrence of the disease would not appear to have been generally noticed.

Spores, and similar cells.

Spores and similar cells were, as will be manifest on referring to the plates and tables, of constant occurrence, and were generally present in considerable numbers. The smallest number observed was 35, which occurred in the preparation of the 28th April belonging to the Presidency Jail, and in that of the 17th July of the Alipore series. In the latter instance the small number was manifestly greatly due to the circumstance that a spider or some small insect had spread a web of delicate threads across the pointed end of the funnel in the interior of the aeroscope. In 20 preparations the number was below 100, and in 19 it exceeded 200. In those cases where the numbers registered are low, they may be taken as absolutely representing all the bodies detected, but, on the other hand, where they are very high, they can only be considered to indicate that *at least* so many were present, as in such cases the whole of the bodies observed were frequently neither drawn nor counted. In some specimens, as for example that of Plate XI, Fig. 4, many of the cellules present may possibly have arisen due to processes of development occurring in atmospheric cells subsequent to their deposition, but in others, such as that of Plate XII, Fig. 2, the character of the majority of cells is not such as to warrant any such conclusion, and it is to be borne in mind that processes of growth and multiplication may probably take place to a considerable extent among such minute, delicate cells even while suspended in the atmosphere, when the latter provides such conditions of temperature and moisture as frequently occur during a tropical rainy season. If the presence of the delicate cellules so prevalent in the specimens collected during the rains were to be accounted for on the theory of their development in the preparations, it would be difficult to account for their not prevailing equally in those belonging to the hot and dry weather. Many of them are probably sporidia produced by the mycelial filaments arising from the germination of the large septate spores so abundant in the air during the dry season, and it is interesting to observe the adaptation in the characters of the cells prevailing at different seasons to the external conditions to which they are exposed, so as to secure the diffusion and reproduction of the organisms to which they belong; those abounding in the dry weather having their protoplasm protected by thick resistant coverings, and those present in the moist air of the rains being so frequently of such extreme delicacy. That the majority of the cells were living and ready to undergo development on meeting with suitable conditions was very manifest, as in those cases in which preparations were retained under observation for any length of time, germination rapidly took place in many of the cells. In few instances did any development take place beyond the formation of networks of mycelium or masses of toruloid cells, but in one or two, distinct sporidia were developed on the filaments arising from some of the larger septate spores, and in a few others, *Penicillium* and *Aspergillus* produced their characteristic heads of fructification. Some of the sporidia closely resembled in characters the peculiar curved cells so abundant in the specimens of June 12th and 30th (Plates VIII & IX, Figs. 2 and 1), whilst others were narrower, more crescentic, and traversed by two or three septa.

Nature of the cells present.

With regard to the precise nature of the spores and other cells present in various instances little can be said, as, unless their development were to be carefully followed out through all its stages, it is impossible to refer them to their correct species or even genera. This, however, is a matter of comparatively little importance from the point of view with which the present observations were undertaken, more especially when it is taken into consideration how extremely uncertain and ill-defined the relations which many of these bodies bear to one another is at the present time. The greater number of them are apparently referable to the old orders of fungi Sphæronemei, Melanconei, Torulacei, Dematiei, and Mucedenes, while some probably belonged to the Pucciniæi and Ceomacei. Among those belonging to the Torulacei the most interesting was a representative of the rare genus Tetraploa (Plate V, Figs. 3 and 4, VI, Fig. 2, IX, Fig. 2). Distinct green algoid cells occurred in some specimens, especially in that of the 17th April. This was obtained from Alipore, and contained an abundance of green, circular cells of various sizes, many of them showing a distinct division of their contents into from two to four separate masses. They occurred both in small aggregations and scattered singly throughout the preparation, and their presence in such numbers was probably connected with the fact that the tank in the immediate vicinity of the aeroscope was being emptied at the time, preparatory to being subjected to a process of cleaning. The numbers of different kinds of cells present in different preparations did not vary greatly; as an average about 18 were present, while in some cases as many as 30 and in others as few as 10 or 12 were observed.

Prevalence of five special diseases compared with presence of spores and cells in the atmosphere.

In proceeding finally to consider the results of these observations as bearing on the question of the existence of any connection between the presence of any peculiarities either in quantity or kind of atmospheric particles with the prevalence of special forms of disease, a few words are necessary in explanation of the tables containing the statistics of disease (*vide* page xxii—xxv.) It will be seen that five diseases only are referred to, namely, diarrhœa, dysentery, cholera, ague, and dengue. These were selected on account of the fact that they may all be supposed to be capable of being induced by atmospheric causes. Four of them were, moreover, among the most prevalent forms of disease during the period of observation, and although this cannot be said of the fifth—cholera, which certainly was not very prevalent in either locality, and in Alipore occurred in such isolated cases as to afford little or no ground for comparison—the figures regarding it are entered because the observations were originally undertaken with special reference to it, and also because a distinct period of prevalence occurred in the Presidency Jail at a time when the other locality was exempt.

Explanation of statistics relative to these diseases.

It is unfortunately impossible to determine how long after their appearance in the air special atmospheric particles might exert an influence in inducing disease, but with a view of, as much as possible, facilitating the detection of any such influence, the statistics of four different periods are given in connection with each observation. The first of these comprises the three days previous to an observation, the second the day itself, the third the three following days, and the fourth the entire week made up by the three previous periods and of which the day of observation formed the centre. For each of these the actual population of the jails and statistics of the various diseases are given, so that they can be compared with the figures showing the numbers of spores and other cells collected from the atmosphere on the various dates of observation. The figures of population consist merely of the sums of the figures entered in the daily Lock-up registers, and no attempt has been made to reduce them to averages, or to state the figures of the diseases in percentages, as this would have rendered the tables more complicated, and the figures, as they stand, appear to fulfil the requirements of the case sufficiently well. A glance at the tables will show that, for all practical purposes, the influence of the fluctuations in the actual population on the prevalence of the diseases under consideration may be neglected, which is all that is required to clear the way for the consideration of the facts regarding the atmospheric spores and cells.

Explanation of diagams of disease.

The first and most general point of enquiry regarding these is, whether the presence of large numbers of them in the air appears in any respect connected with the prevalence of any of the diseases. Two diagrams (II and IV) have been constructed in order to elucidate this point. These show the fluctuations in the numbers of spores and cells at the various periods of observation, and the contemporaneous fluctuations in the prevalence of the diseases, by a series of graduated lines. It will be seen that each diagram contains a column at the left hand showing the number of graduations from below upwards, while the numbers of the observations are shown at the top. The number of each graduation corresponds with the actual number of cases of disease for each period and with the number of the spores and cells reckoned by tens: thus when the line corresponding with any disease reaches into the twentieth graduation, it indicates the occurrence of twenty cases of that disease; but when the line indicative of the number of spores and cells reaches the same height, it represents the presence of any number of these bodies from two hundred to two hundred and nine, inclusive. The figures of disease consist of the sum of those for the day of observation and the three following days, so that if any appreciable effect were produced during that period, it ought to be trace- [illegible] of the angles formed by the two lines. As mentioned previously, [illegible] ation, for from the absence of daily registrations, the data are necessarily imperfect, so that even were effects apparently traceable in any instance, the possibility would yet remain that the connection was merely apparent and the phenomenon accidental. Moreover, a connection might really exist and yet not appear if the curves of disease were dependent on the conditions of days other than those of observation; still the comparison, such as it is, has been made with the view of ascertaining whether the results in any instance furnish any grounds for expending time in more elaborate observations in the same direction. When these diagrams are examined, it certainly appears that no connection is traceable between the two phenomena. The rises and falls in the prevalence of the diseases in no instance show any constant coincidence either of

No connection traceable between numbers of atmospheric cells and prevalence of any of the selected diseases:

agreement or discord with those in the numbers of atmospheric cells, and as the numbers of the latter have been already shown to vary independently of varying conditions in velocity of wind, the conclusion, so far as the information goes, is that mere number of recognisable atmospheric cells in a given bulk of air has no effect on the occurrence of the diseases under consideration, and is not even capable of indicating the existence of conditions favouring their occurrence.

Nor between special forms of cells and such prevalence.

The next point to be considered is, whether the presence or prevalence of any special form of cell appears to be capable of acting in either of these ways. The only instance which in the least suggests the existence of such a capability is in reference to cholera; for if we compare Fig. 2, Plate VIII, illustrative of the bodies present in the specimen obtained at Alipore on the 12th June, with Fig. 1, Plate IX, showing those in that of the 30th June at the Presidency Jail, the comparatively large numbers of peculiar curved spores or sporidia in both cannot escape notice, and the figures of cholera for the weeks to which the observations belong are three and five respectively. Moreover, these cells did not begin to appear in any numbers in the specimen obtained in the Presidency Jail on the 16th of June, that is, in the specimen of the entire series next in date to that of the 12th June, but only in the one of the 23rd, so that a distinct interval elapsed between their appearance in the two localities, and their appearance in both coincided with the occurrence of cases of cholera in them. When, however, we come to compare the subsequent specimens in both the coincidence ceases, for, on examining those of the 20th and 26th June and 3rd July at Alipore, and those of the 7th, 12th, and 21st July at the Presidency Jail, it will be seen that the numbers of the peculiar cells present in them did not greatly differ, whilst the disease ceased abruptly at Alipore, but continued for two weeks in the Presidency Jail. That the coincidence was a purely accidental one, was, moreover, rendered evident by the result of some further observations (Section III, Experiments II, III, and IV) conducted in the Presidency Jail during a period in which cases of cholera occurred at another time of year; for in these instances bodies of a like nature were absent, and the cells present were merely those normal to the time of year. This affords an excellent example of the benefits to be derived from continuous observations in one locality in place of isolated ones confined to periods of prevalence of disease in several. Had the latter alone been carried out, the deceptive coincidences pointed out above might easily have been overlooked, and the observation of the presence of these cells have acquired undue importance.

Results of this series of experiments.

The principal results obtained from this series of observations were the following:—

1.—Distinct infusorial animalcules: their germs and ova are almost entirely absent from the air in Calcutta and the neighbourhood.

2.—Bacteria are hardly ever to be detected in it, but there is constantly present a large quantity of molecular matter, and the possibility remains that much of it may be of a bacterial nature.

3.—Spores and other vegetable cells are constantly present in the air in considerable numbers; the majority of them are alive and capable of growth and multiplication; their numbers are independent of velocity and direction of wind; and they are not diminished by moisture.

4.—No connection could be traced between the numbers of cells present and the prevalence of diarrhœa, dysentery, cholera, ague, or dengue; nor between the presence of any special form and such prevalence.

5.—The amount of the amorphous and inorganic constituents of atmospheric dust is directly dependent on conditions of moisture and of velocity of wind.

SECTION III.

MISCELLANEOUS AEROSCOPIC OBSERVATIONS.

In addition to the regular series of observations detailed in the preceding section, various other experiments were tried by means of the aeroscope in the same localities. The majority of them were made, previous to the others, during the months of December 1871 and January and February 1872, but a few were also carried out in March 1873, in connection with the occurrence of some cases of cholera in the Presidency Jail at that time. Only a few of them demand any special mention, while the results of the remainder may be briefly summarized. The inorganic and amorphous constituents need not be alluded to, as they presented the ordinary features common to all specimens of atmospheric dust, the relative proportions of the various elements merely varying in some degree. Starch corpuscles, hairs and other fragments of vegetable tissues, with fibres of various kinds, were present in small quantities. Pollen grains, as a rule, were almost or entirely absent, but one specimen contained a form only observed on one other occasion, and that at a different place after some months' interval (*vide* Plate IV, fig. 4). In every case spores and fungal cells were present, and generally present in considerable quantities. The forms differed little from those occurring later, and figured in the plates illustrative of the previous section, but, as a rule, septate spores and sporangia were not so abundant as in these, whilst small oval and fusiform cells of an olive-greenish hue were present in larger proportion. These preparations also contained no bodies recognisable as dried infusoria or the cysts or ova of such organisms.

Times when observations were carried on and their general results.

The total number of experiments amounted to 28; and the sites chosen for observations were roofs of various elevations, posts like those afterwards employed in the systematic observations, the branches of trees, &c. When used in irregular situations, the apparatus was fitted to a spindle surmounting a metal rod about 5 inches in height with a heavy circular base which kept it in position. The shortness of the support, though very useful in allowing of easy transport and adaptation to comparatively confined spaces, had no doubt the disadvantage of not raising the mouth of the tube so high as to avoid particles of various kinds blown from surrounding surfaces, but not belonging in reality to the class of bodies forming the subject of this report—the suspended impurities of the air.

Number of experiments, and localities in which they were tried.

I shall now detail the results of one or two of the experiments which seem to involve points of some interest.

Experiment I.—The apparatus was set on an old masonry pillar, originally forming one side of a gateway, in the garden at the Presidency Jail. It was exposed from 9-30 A. M. of the 10th to 8 A. M. of the 11th January 1872. The slide showed some dust visible to the naked eye. On microscopical examination it was found to contain the usual inorganic and amorphous constituents, but was chiefly characterised by the presence of an extreme profusion of minute pale-green cellules. They showed various stages of development, some being circular, others oval, and others again distinctly bi-lobed and evidently proceeding towards complete division. They were universally diffused over the preparation, but were specially abundant in the neighbourhood of one or two masses of the brownish filaments of a large *Lyngbya* which were present. Very few other kinds of cells were observed. This specimen was instructive in showing the necessity for great caution in assuming the general diffusion of large numbers of peculiar cells in the air of any locality merely because of their abundance in specimens collected there. Had the algoid filaments, entangling masses of the cellules in this case, not been observed, it might have been very naturally concluded that the latter were generally diffused through the air to which the apparatus was exposed, but, taking all the circumstances into consideration, the probabilities were greatly

Specimen abounding in greenish cellules.

in favour of this not being the case, and of their preponderance being really due to their having been introduced in one or two aggregations and subsequently diffused over the surface of the glass.

The three following experiments were those previously alluded to as having been carried out during the course of a period in which cases of cholera occurred within the Presidency Jail.

Similar organisms present at corresponding seasons of 1872-73.

Experiment II.—A mild case of cholera having occurred during the night between the 15th and 16th March 1873, the aeroscope was placed on the post within the jail, in the same locality as in the systematic observations, at 8 A. M. of the 16th and remained exposed until 1 P. M. of the 18th. The specimen showed a considerable amount of fine dust visible to the naked eye. This, as usual, was found to consist mainly of amorphous fragments with a sprinkling of angular particles of silica and a few masses of carbon. The vegetable cells present were in relatively small proportion, and consisted of pollen grains with fungal cells and spores, like those occurring in the specimens collected at a similar period of the previous year and figured in Plate I. The olive-green, oval and sometimes somewhat truncate and angular cellules present at that time re-appeared here, and there was an absence of any of the forms which appeared in any degree specially to characterise the air during the prevalence of cholera in the preceding July.

Elongated hairs, which had frequently been observed in other specimens at various times of year, were present in considerable abundance, and their nature and origin were here detected, for, on examining the felt-like covering investing a collection of ova which had been deposited by some insect within the anterior part of the apparatus, it was found to consist of a mass of such bodies densely interwoven. The hairs in question are of a greyish-green tint, pointed at either extremity, and enclose a mass of beautifully striated ova.

Specimen with abundant germinating spores.

Experiment III.—Two fatal cases of cholera occurred in the jail on the 22nd March, a 3rd on the 23rd, and a 4th on the 25th. The aeroscope was set as usual at 10 A. M. on the 22nd and remained exposed until 11 A. M. on the 24th. The preparation contained a good deal of visible dust. On microscopical examination an abundance of the spores, normal to the time of year, were detected with a profusion of fine molecules and granules. One example of a spore of the *Tetraploa* occurring in several specimens of the previous year (*vide* Plate IX, fig. 2, &c.), and numerous specimens of brown septate filaments containing masses of greenish protoplasm, were observed. A very large proportion of the spores and even some of the filaments above alluded to, germinated rapidly, the protoplasmic masses in the latter giving origin to delicate greenish filaments, more especially in those cases in which they were contained in joints which were open at one or both extremities due to rupture of the filament to which they belonged.

Specimen containing an ovum.

Experiment IV.—The aeroscope was set as usual at 11 A. M. of the 24th March and remained exposed until 7 A. M. on the 29th. Several cases of cholera occurred during the interval. The preparation contained a large quantity of dust visible to the naked eye. The microscope showed a profusion of brownish amorphous masses, numerous angular particles of silica, and an infinite number of minute molecules and granules. Hairs like those described in Experiment II abounded, and a few insect scales were likewise present. There were also large quantities of wheat starch together with a certain proportion of smaller grains apparently belonging to rice. The proportion of spores and pollen grains present was considerable, but they presented no special peculiarity, nor did any form greatly preponderate. One specimen of the peculiar small dark-brown cells, aggregated in fours within a delicate envelope and figured on page xxxv, and one large oval cell with firm walls and mulberry-contents, apparently an ovum of some kind, were also present.

The latter three experiments were useful in affording an opportunity of comparing the microscopic characters of the air in a locality at two different times of year, in both of which cases of cholera occurred. The results of this comparison

No special characteristics in specimens obtained during the occurrence of cholera.

in the present instance showed no special correspondence between the nature of the bodies present and no preponderance of any individual form on both occasions; on the contrary, there was a perceptible difference in them apparently due to seasonal influences. It is possible that among the heterogeneous mass of bodies included, in default of a better term, under the word molecules, there may be various species possessed of various distinct properties, and that some such species may have been present on both occasions, but in so far as bodies presenting recognisable characteristics are concerned, the present set of experiments did not even go so far as to indicate the presence of any general atmospheric condition coincident with the occurrence of cholera, far less did it tend to connect any special atmospheric organism with the disease.

Search for bacteria in atmospheric dust.

A certain number of specimens were collected specially with the view of ascertaining whether bodies definitely recognisable as bacteria occurred constantly or frequently in the air. The period during which they were obtained was early in the rains, when the air and ground were both moist, so as to avoid as much as possible an excess of the coarser inorganic constituents of dust. The preparations were carefully examined under a power of 1,000 diameters, but although minute rounded monad-like particles were constantly present in large numbers, and a few more elongated stave-like bodies were occasionally to be detected, distinct unequivocal bacteria were of very rare occurrence. The three following instances may be cited as illustrative of such experiments:—

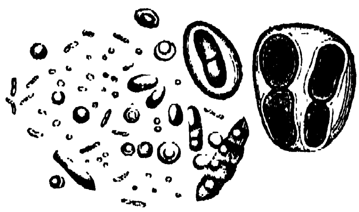


FIG. 4.—Cells and bacteroid particles of atmospheric dust. Magnified 1,000 diameters.

Abundance of minute molecules.

Experiment V.—(Fig. 4). The aeroscope was exposed for 24 hours of showery weather on the post in the Presidency Jail. The preparation contained hardly any trace of dust visible to the unaided eye. Some spores and other fungoid cells were present, among which was one specimen of a peculiar compound body, previously observed on several other occasions, consisting of four dark brown, oval, slightly constricted cells, adherent in pairs and included within a very delicate enveloping sac, invisible save under a very high power. There was also an evenly diffused sprinkling of very minute rounded oval and irregular particles and a very few bacteroid bodies.

Absence of distinct bacteria.

Experiment VI.—(Fig. 5 a.) The aeroscope was exposed for 24 hours in the Presidency Jail. During the greater portion of the time, the weather was still and close, and at one period a heavy fall of rain occurred. As in the previous experiment hardly any coarse dust was present. The preparation contained a sprinkling of minute amorphous fragments and fungoid cells, many of the latter being evidently spores of *Aspergillus*. No unequivocal bacteria could be detected, but one or two rod-like bodies were present, and minute micrococcoid particles were generally diffused over the entire surface.

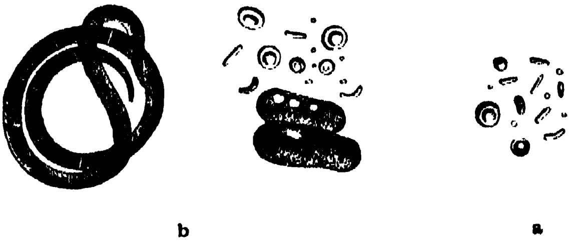


FIG. 5.—Bacteroid particles, spores of *Aspergillus*, *&c.*, Magnified 1,000 diameters.

Experiment VII.—(Fig. 5 b.). Another preparation was obtained from the same locality as the two previous ones. Here also there was an almost entire absence of particles visible to the naked eye. It contained a few of the common amorphous and carbonaceous bodies, and one or two minute fragments of silica. Various kinds of cells were present, including a good many spores of *Aspergillus*, one specimen of a curious *Spirillum* of considerable size, and greenish colour, and one of the compound bodies described and figured in Experiment V. No distinct bacteria could be detected, but one or two small staves were observed together with a generally diffused sprinkling of granules and micrococcoid particles.

Numerous spores of Aspergillus.

In these and similar observations, although there was a general absence of distinct bacteria, there was, as is almost invariably the case in all specimens of atmospheric dust, a general diffusion of minute particles resembling those included by Robin under the term micrococcus, and as long as the precise nature of all these bodies remains undetermined, it is impossible to deny that many of them may be of a bacterial nature, and capable of growth and multiplication on coming in contact with a favourable medium.

Nature of the molecular matter uncertain.

SECTION IV.

OBSERVATIONS ON DUST DEPOSITED ON LEDGES, LEAVES OF TREES, &c.

Some observations of this kind were made at different times. The specimens were obtained by lightly brushing the surface bearing the dust with a clean camel's hair pencil which had been moistened by immersion in boiling distilled water. However light the friction may be, it is impossible in this way to procure specimens accurately representing atmospheric dust, as organisms growing on the surface under examination are almost certain to be detached and appear in numbers very much greater than they are in the dust diffused through the air. Some of the specimens of this series showed this very distinctly, the washings from the leaves of a *Dracæna* constantly containing a profusion of delicate bluish-green cells and filaments which did not prevail in specimens of dust collected from the air in the immediate neighbourhood, while those collected from the upper surface of the leaves of a *Ficus* showed only a very few specimens of bright-green circular palmelloid cells which were present in very large numbers in those from the lower surface of the same leaves.

Fallacies inherent in such observations.

The proportions of the various constituents of the dust naturally varied considerably with the locality from which the specimens were obtained. When the latter were derived from the leaves of trees near roads traversed by considerable traffic, the sand and other inorganic constituents were present in large amount, whilst in those from trees situated in wide open areas covered with grass, the inorganic elements fell to a minimum, whilst spores, filaments, and algoid cells were present in relative and sometimes in absolute abundance. The proximity of tanks also in some cases appeared partially to influence the characters of the specimens, as, in those obtained from trees growing just at the edge of the water, fragments of distinct confervoid filaments and bright-green algoid cells were present in much greater abundance than in others from surfaces far removed from bodies of water. The dust collected from the ledges of doors, windows, and other places within houses usually contained a large amount of silicious particles, and comparatively few of the larger septate spores so common in the outside air, but abounded in minute greenish, rounded and oval cells, evidently the spores of *Penicillium* and *Aspergillus*, dried stems and heads of the latter fungus being also occasionally present in addition to the spores. Specimens from the rough surface presented by the broken glass covering the wall of the Presidency Jail contained, among other inorganic constituents, numerous sharp angular green particles of glass and an abundance of carbon. Starch corpuscles and fragments of the coats of wheat grains were also present in peculiar abundance in them,

Circumstances influencing the characters of dust.

and, with the carbon, were probably due to the proximity of one of the bakehouses of the jail.

Constant presence of spores and absence of infusorial animalcules.

All the specimens examined contained spores and other vegetable cells in some, and generally in considerable numbers, but only in two cases were any bodies present which could be supposed to be the cysts of infusoria. Entire dried infusoria were never observed, and even the cysts alluded to above were of a very doubtful nature, all that could be said regarding them being that the possibility of their infusorial nature was not precluded. Hardly any pollen grains were present in any instance, a fact no doubt due to the grasses not generally being in flower at the time of year (November and December) when the observations were carried on.

Specimens of dust from cholera localities.

Two specimens of dust obtained from localities in which cholera was prevailing may be described somewhat more fully here. The first of these was washed from the leaves of a shrub in a Bengali village in which cholera was prevailing severely, several houses containing cases of cholera at the time being in the immediate neighbourhood. It contained the normal constituents of atmospheric dust, inorganic and organic particles, large septate spores, &c., and was chiefly characterised by a profusion of minute colourless curved cells, with a sprinkling of somewhat clavate jointed filaments and colourless circular cells. The second specimen was obtained from the leaves of a bamboo close to a house in another village in which cholera was present. It consisted mainly of angular particles of silica together with a sprinkling of the pollen grains and spores present in common specimens of air. No specially characteristic form could be detected in it.

Before concluding this section a brief account may be given of one or two experiments which were tried regarding the results of adding dry dust to putrescible solutions.

Experiments on fermentive properties of dust.

Experiment I.—On the 15th April 1873, two wax cells were very carefully prepared. A drop of fresh urine which had just been subjected to prolonged boiling was placed on the centre of the cover glass of each by means of a glass rod which had been heated to redness immediately previous. The drop placed on the first cover consisted of pure urine, but that on the second contained a little dry dust obtained by applying the moist end of the rod to a ledge about 7 feet from the floor on a glass door opening into a south verandah. That the dust had been undisturbed for some time was evident from the state of the surface on which it lay, and that it was dry, may be judged from the fact that during the previous week the lowest maximum reading of the thermometer registered in Calcutta at the Office of the Surveyor General was 90° F., whilst the maxima for the four previous days had been 99°, 101·9, 103·5, 102·0 with contemporaneous mean humidities of ·73, ·69, ·59, ·68 and no rain for above a month previous. The verandah on which the door in question opened is, moreover, exposed to a hot dry blast from the heated roofs of a range of low buildings, whenever the direction of the wind is from the south or south-west, as it had been almost without intermission for seven days before.

Rapid development of fungi and bacteria.

Both preparations were then sealed and kept under observation. That consisting of the pure urine remained perfectly clear, and, up to the present date, (September 9th) has never showed anything save a few crystals and amorphous bodies. The preparation inoculated with the dust, on the second day, contained a sprinkling of very active bacteria, and on the following one was distinctly cloudy to the naked eye and crowded with similar bodies. Some of the spores contained in the dust had also by this time germinated and their mycelium spread rapidly, absorbing the fluid and almost entirely drying up the preparation within a week.

Experiment II.—The aeroscope was carefully washed with strong spirit and subsequently heated by moistening it with more spirit and burning off the latter. A large clean glass cover which had been passed through the flame of a spirit-lamp, was then put into it and the surface moistened with some fresh urine

Dust collected during a dust-storm.

which had just been subjected to prolonged boiling. The apparatus was next set on the post in the Presidency Jail, and remained exposed for 21 hours, being removed on the morning of the 21st April. A violent storm of wind, dust, and rain occurred during the period of exposure, and the preparation was found to contain a large amount of dust visible to the naked eye. The glass was carefully removed by means of a pair of forceps which had been exposed to a red heat,* a little freshly boiled urine was added to the dust, and the cover was then applied to a wax cell. Finally a drop of the same urine was mounted in a second wax cell, and both preparations were set aside. The experience of the previous experiment was repeated in this, for, while the preparation containing the dust rapidly showed the presence of bacteria and fungal mycelium, that composed of pure urine remains unchanged until now. The proportion of active bacteria was not so great and that of mycelium was very much greater in the dust preparation of this experiment than in that of the former one. Some of the mycelial filaments gave origin to lateral twigs bearing secondary spores or sporidia not very unlike those occurring in such abundance in the specimens of atmospheric dust figured on Plate VIII, fig. 2, and Plate IX, fig. 1.

Results in inoculated and pure specimens of urine.

Experiment III.—Two wax cells were prepared as usual, a drop of pure freshly boiled urine set in one of them, and a drop of the same urine, to which a little dry dust obtained from a window ledge six feet from the ground had been added, in the other. The lowest maximum temperature registered for the week was 84°2, and the maxima of the three previous days had been 93°0, 92°0, and 84°2. The mean humidity of the air for the same days was ·79, ·81, ·80, and there had been a fall of 2·19 inches of rain during the previous month. Two days afterwards the second preparation was cloudy to the unaided eye, and on microscopic examination was found to be crowded with active bacteria, whilst the first remained perfectly clear and free of bacteria and fungi until, due to a slight separation of the wax from the slide, the cell ceased to be air tight and the fluid evaporated, an accident which occurred six days after the commencement of the experiment.

Chief points of interest in these observations.

The two most interesting points in connection with this series of observations are, 1st, the almost entire, if not entire, absence of infusoria, their cysts or ova from the dust collected in various localities, such as the leaves of trees, &c., in which they have been described as occurring in abundance; and, 2nd, the remarkable effects in the way of development of bacteria following the addition of dry dust which had been exposed to a tropical climate at the hottest and driest time of year. The dryness no doubt is only a very relative matter in Calcutta, but yet at the very time that the dust was capable of producing these remarkable effects, the air was dry enough to cause the leaves of most garden shrubs to lose their freshness and acquire a semi-withered aspect. It must, however, be borne in mind that as the samples of dust were obtained from exposed situations, they may have contained specimens of bacteria or of their germs which had not been subject to drying for any length of time as any insect is capable of transferring many such bodies from a fluid or a damp place to a collection of dry dust.

SECTION V.

OBSERVATIONS ON THE DUST DEPOSITED DURING LIMITED PERIODS ON MOIST GLASS SLIDES.

Only a few such observations were carried out, as it was found that the specimens so obtained were peculiarly liable to contamination from bodies not really of an atmospheric nature. It is almost impossible to expose surfaces

---

* The forceps, glass rods, &c., employed were always carefully heated in the flame of a spirit-lamp before being used.

Difficulties in securing good specimens of dust by deposition.

of glass to the air for any length of time in such a way as to allow of the deposition of suspended particles upon them, and at the same time to prevent the likelihood of birds or insects adding accidental impurities to them, quite independent of those generally diffused through the air. Even aeroscopic preparations, as has been already pointed out, are liable to be affected by the entrance of insects into the tube, and it is clear that a flat surface of glass exposed to the air without any cover is very much more so. Birds can be kept off by means of enclosing the slides within a light cage, but any cage securing the exclusion of insects would at the same time very seriously interfere with the access of the bodies held in suspension in the air.

Localities in which experiments were tried.

The localities in which experiments were tried were, 1st, the flat roof of a building 40 feet from the ground; 2nd, the roof of another building 15 feet from the ground; 3rd, the surface of the ground in a garden full of shrubs and small trees; 4th, one of the wards in the Presidency Jail. The preparations from the first locality were obtained by exposing slips of glass for periods of 12 and 14 hours during the night in the months of November and December. Four slips were employed on each occasion, their surfaces being coated with strong glycerine, and a certain amount of protection being afforded to them by means of a cage-cover. All the specimens very closely resembled one another in their characters, containing a very scanty sprinkling of silicious and amorphous particles, one or two large septate spores and a few sporules of *Aspergillus*. In two not merely the latter, but entire stems and heads of the fungus were present. Preparations from the lower roof were obtained on three separate occasions in November, January, and February. Four slides were employed on each occasion, and the length of exposure was about 12 hours in two instances, and 72 in the third. The preparations obtained by the short exposures were alike in containing very little dust of any kind, and a scanty sprinkling of spores and fungoid cells. The third set of preparations contained an abundance of dust, visible to the naked eye, and on microscopical examination found to consist of the usual silicious and amorphous particles, with numerous masses of granular carbon, a large quantity of wheat starch and some filaments of cotton. There was also a sprinkling of angular fragments of green glass and a certain number of fungal cells, the majority large septate sporangia, the protoplastic masses contained within them having in many instances begun to emit mycelial filaments. The specimens obtained at the surface of the ground were the result of one exposure of 13 hours during a night in November. They were four in number and contained very little dust of any kind. Very few spores or cells were present, the only form observed in any numbers being an oval colourless spore of considerable size apparently belonging to some Agaric. Twenty of these bodies were observed, and it may be remarked that this and one or two of the slides of the series described immediately above were the only preparations in which they occurred.

Specimens obtained from wards in the Presidency Jail.

Only two sets of experiments were tried in the last locality, the ward in the jail, as the amount of dust deposited in them was found to be so great as to render the preparations very obscure. In the first instance four slides prepared with glycerine and placed on a small wooden stage were introduced into a ward, containing 25 men, and were allowed to remain exposed for 14¼ hours, not being removed until the prisoners had left the place on the following morning. All of them were thickly coated with dust consisting of silicious and amorphous particles, with an abundance of epithelial scales, starch corpuscles, and fibres derived from the clothing and blankets of the prisoners. Thorough examination was impossible due to the thickness of the dust, but the proportion of spores or other fungal cells present was certainly relatively very small. A few pollen grains and one body resembling a *Peridinium* were detected. In the second experiment the slides were only allowed to remain exposed for 8 hours, being introduced some time after the men had been locked up, and removed before they came out on the following morning. The preparations were much less loaded with dust than in the previous instance. They contained an abundance of particles of silica and of amorphous matter in brownish masses of various sizes. All throughout there was a profusion of granular and molecular matter. Numerous epithelial scales, with a few oil globules, fibres of various kinds and fragments of hairs, were also present. Only a few spores and other fungal cells were detected, and these showed no peculiarities, being of the ordinary forms observed in the external air. Only a very few cellules resembling *Aspergillus* spores were found.

This set of experiments confirmed the fact of the general diffusion of fungal elements in the atmosphere, with an almost absolute absence of infusorial cells. The relatively small proportion of fungal cells present is just what might be expected from the method of collection employed, as where gravitation alone comes into play the heavier inorganic and amorphous suspended particles must almost inevitably appear in high proportion.

SECTION VI.

OBSERVATIONS ON ORGANISMS AND OTHER SOLID BODIES CONTAINED IN DEW.

Few experiments and unsatisfactory results.

Only four experiments of this kind were tried, as the results obtained by their means were unsatisfactory, and presented nothing remarkable or worthy of special investigation :—

Apparatus employed to collect the dew.

Experiment I.—A clean test tube was taken, and a small glass funnel having been fitted to it (the nozzle having been passed through a tight-fitting clean cork in the mouth), it was placed in a porous earthenware vessel. The lower part of the vessel beneath the tube was occupied by straw, to allow of the easy draining off of fluid, while the rest of it was filled with broken ice to facilitate condensation. The apparatus was then set on the ground in the garden of the Presidency Jail at 8 P. M. of the 5th December 1871, and allowed to remain until 6-30 A. M. of the 6th. About half a drachm of fluid was found in the test tube. The night was cold and still, and the morning very misty.

Several preparations were examined, but hardly anything could be detected in them. A few minute fragments of silica, a very scanty sprinkling of fine molecules and granules, some bodies resembling minute, still bacteria, and one or two fungoid cells of various kinds were present.

Specimen in which a small diatom was present.

Experiment II.—The same apparatus was set in the same place at 10 P. M., 6th December, and removed at 6-30 A. M. of the 7th. Specimens of the moisture adhering to the sides of the funnel were first examined. They contained a very scanty sprinkling of silicious particles, a few molecules and granules, and one or two spores and sporoid cells of kinds prevailing in specimens of atmospheric dust collected at the same time of year. There was only about half the amount of fluid in the tube this time, as compared with the former one; but it contained a visible sediment, consisting of angular fragments of silica, and an abundance of particles of various sizes. A few fragments of brown septate mycelial filaments, one or two spores and a single specimen of a small species of diatom were also present.

Second method of collection.

Experiment III.—A different apparatus was employed in this case, consisting of a clean glass basin, surrounded by ice and straw, in a larger unglazed earthenware vessel. This was set in an open space, in the same garden as before, at 8 P. M. of the 8th December and remained until 6-30 A. M. of the 9th. A considerable amount of fluid had collected during the interval and was found to contain a scanty sprinkling of fungal cells and greenish filaments.

Experiment IV.—The apparatus employed in the previous experiment was set again in the same place at 8 P. M. of the 11th December and remained exposed until 6-30 A. M. of the 12th. The night was still, cold and tolerably free from mist. A considerable quantity of dew was present on removal. It contained a few silicious and amorphous particles, a good deal of fine molecular matter, and some spores and fungoid cells of several kinds.

General uniformity in characters of specimens.

All the specimens obtained agreed with one another very closely in the characters of the bodies which they contained. It was impossible by their means to form any approximate idea of the number of spores and other cells generally diffused in the air, as, unless in the case of bodies sinking down so as to form a recognisable sediment, large numbers of cells might be present in the fluid and yet not appear in any considerable numbers in the specimens of it which were examined; whilst, on the other hand, an opposite error might arise from the latter containing numerous cells derived from masses, only one or two of which were present. The only remarkable feature in any of the preparations was the occurrence of a diatom in No. II, as this was the only occasion on which such a body was observed in any of the observations on atmospheric dust.

SECTION VII.

OBSERVATIONS ON ORGANISMS IN RAIN-WATER.

Question of existence of Bacteria in air.

The question of the existence of Bacteria in atmospheric air and of their diffusion by its means is one of great interest and importance, and is, moreover, one regarding which there is considerable difference of opinion. Formerly their presence was denied only by the supporters of spontaneous generation, but in more recent times various observers have appeared, who, while denying the origin of bacteria *de novo*, regard their presence in the air as quite exceptional and ascribe their rapid appearance in putrescible solutions, not to the entrance of atmospheric germs, but to the occurrence of contact inoculation. Any careful observations bearing on the point are, therefore, a desideratum, and I have accordingly no hesitation in introducing a somewhat detailed account of some here.

Experiments regarding their presence in rain-water.

The water collected during heavy tropical showers furnishes a good subject for such investigations, as it is likely to contain specimens of the solid particles contained in the atmosphere washed down by the rain in its descent; affords a medium in which they can develope, to some extent at all events, and is, moreover, one in which, with due precautions, risks of contact communication can be reduced to a minimum. The following series of observations were therefore made on it during the present summer:—

Means of obtaining and preserving specimens.

Appearance of flocculi in the fluid.

Experiment I.—A clean glass basin was carefully washed both internally and externally with spirits of wine. Some more spirit was then put into it, ignited and allowed to burn off. The basin was next placed on a roof about 40 feet from the ground, being raised over a foot from the flat surface in order to diminish the risks of water splashing up into it. A heavy shower had fallen about half an hour before and another was just beginning when it was exposed. It was allowed to remain for three hours, and when removed contained about three drachms of clear fluid. Two specimens were taken from it by means of a pipette which had been heated to redness immediately previous, and it was then set in a glass saucer and covered by a bell-glass. Both saucer and bell-glass had been washed with spirit and fired, and the edges of the latter had been coated with wax heated to 240° F., so that, when it was pressed down on the saucer, it isolated the basin in a hermetically sealed chamber. The specimens removed before this was done contained a few small amorphous brownish masses, particles of silica and minute molecules like those normally occurring in atmospheric dust, together with one or two small greenish cellules apparently spores of *Aspergillus*. The basin remained untouched beneath the bell-glass for four days. The water remained perfectly clear, but two days after its collection a few delicate whitish flocculi appeared floating in it and gradually increased in size and number. Specimens of both fluid and flocculi were carefully removed by means of a pipette which had, as before, been heated to redness. The flocculi consisted of mycelial filaments of various kinds, some of which bore penicilloid heads with young spores on lateral branches, while others took their origin from large septate spores like those commonly present in the air and bore sporidia of various forms. (*Vide* Fig. 6, 1).

Their microscopic structure.

In the meshes of the mycelium a sprinkling of the common particles of atmospheric dust were entangled, consisting of fragments of silica, vegetable hairs, particles of carbon, &c. There were also a few small collections of yeast-like cells, and one small mass of bright green protococcoid bodies. Not a trace of bacteria, vibriones or any infusoria could be detected.

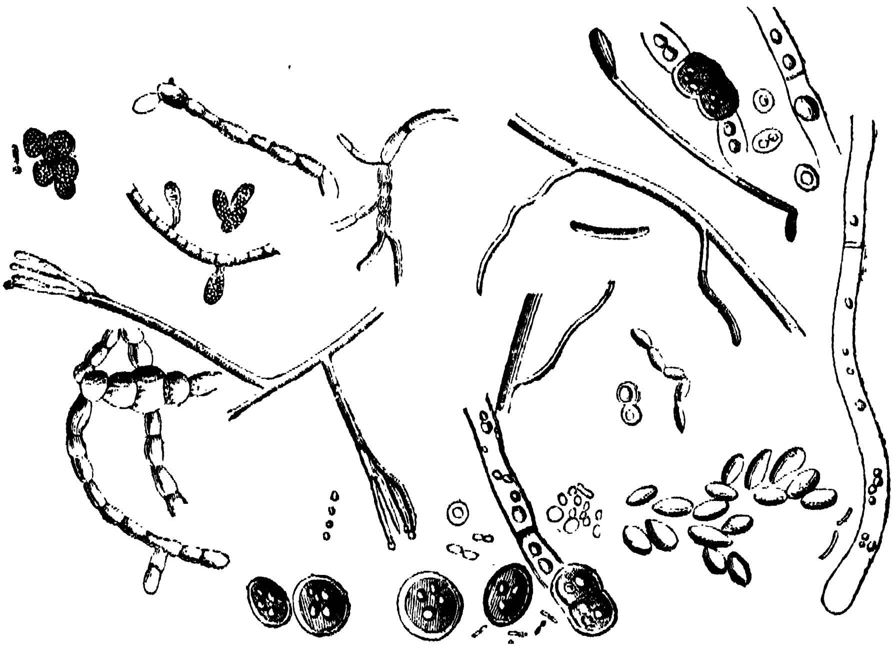


FIG. 6.—Spores and mycelium in rain-water: 1, specimens occurring in Experiment I, magnified 400 diameters: 2, specimens from Experiment III, page 44, magnified 1,000 diameters.

Experiment II.—(*Vide* Fig. 7). Some rain-water was again collected and preserved in the same way, with the same precautions, and from the same locality as in the previous experiment. On this occasion the fall was quiet and steady, and did not consist of a violent thunder shower as then. The only objects visible in the water at first were a few particles of carbon. Forty-eight hours after collection some delicate whitish flocculi had made their appearance in the fluid. Seventy-two hours after the specimen had been hermetically sealed the bell-glass was removed and the flocculi examined microscopically. They were found to consist of dense net-works of mycelial filaments, many of which bore isolated macroconidia in their course. These were brightly refractive and full of protoplasm whilst the joints of the filament on either side of them were almost or totally empty. Many of the filaments were more or less disintegrated, some having their protoplasm broken up into globules, and others being empty and partially decomposed, while their surfaces were coated with granules and short staves embedded in a transparent gelatinous medium. In the fluid around there were also numerous similar bodies, some of which were still somewhat adherent to the gelatinous matter, whilst others were quite free. The staves consisted of two more refractive particles united by a delicate intermediate portion; they strongly resembled bacteria, but showed no vital motion. The felts of mycelium contained a sprinkling of the ordinary constituents of dust entangled among their fibres. After the preparation had been removed from the fluid in the basin, the bell-glass was immediately replaced and pressed down so as to cause the wax again to adhere to the saucer.

Filaments producing macroconidia.

Presence of bacteroid bodies.

Two days afterwards a fresh examination was made. The disintegration of the mycelial filaments had advanced considerably. Some were filled with granular protoplasm; in others this condition was more pronounced, the granules appearing to project on the surface, and in others the filaments were quite empty, but coated with granules like those in the interior of the former ones, together with the staves previously described, embedded in a gelatinous layer.

Abundance of Conidia.

Mycelium arising from common atmospheric spores.

Numbers of both rods and granules were likewise free in the fluid, but, as before, were quite motionless. There were numerous specimens of the macroconidial cysts filled with refractive protoplasm, and coming out in strong contrast with the empty, often much disintegrated, filaments in the course of which they occurred. Conidial cells of various forms, isolated or in chains of some length, were also present in abundance. The specimen was enclosed beneath the bell-glass as on the previous occasion and was not again disturbed for five days. The fluid remained perfectly clear and showed nothing beyond the remaining flocculi. A preparation of these was again examined. Disintegration of the filaments had proceeded much further than in the previous specimen, the greater number of the cysts being quite free or with mere fragments of empty tubes remaining adherent to them. Granules and staves were present in great abundance, and in several cases the masses of mycelial filaments were observed to take their origin from common large, brownish, septate, atmospheric spores.

Escape of active zoospores.

The specimen was again sealed and left for six days more. The filaments were then greatly disintegrated but the cysts remained very distinct and were present in abundance. They contained a mass of protoplasm marked with one or two granules and clear spaces, the latter of which could be seen to alter in number and position. In several instances these protoplasmic bodies were observed gradually to work their way out of their cysts, which were then left behind as extremely delicate rings, hardly visible save with careful examination. The process was comparatively slow and the escaping zoospores, for such they seemed to be, *showed a well-developed flagellum in active motion for some time before they were entirely free.* Once detached in the fluid they moved actively about by means of the flagellum as well as by free amœboid extensions of their substance, and in many cases the flagellum temporarily or permanently disappeared, so that, had the process not been actually observed to take place, the two conditions might have been regarded as belonging to distinct organisms. In other parts of the preparation, the mycelial threads had resolved themselves into innumerable conidial cells, while in others they were more or less completely decomposed into gelatinous masses containing granules and bacteroid staves. In one or two places cellular perithecia, somewhat resembling those of *Eurotium*, but of a pyriform shape and with a distinct ostiolum, were present, which, on pressure, discharged a multitude of minute narrow oval spores.

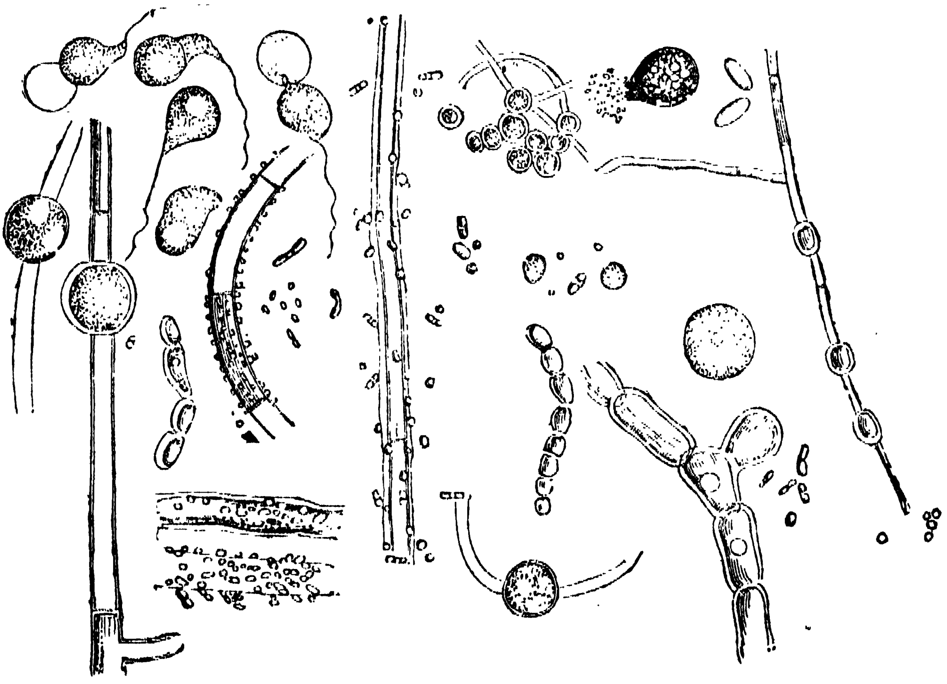


FIG. 7.—Organisms developed in the Rain-water in Experiment II. The Perithecium at the upper part of the figure magnified 120 diameters. The Filament to the right of it magnified 400 diameters. The rest of the objects magnified 1,000 diameters.

After this the specimen was still kept for some days longer, and preparations from it examined at intervals, but no further developments were observed to occur, and no active bacteria ever appeared in it.

Experiment III.—(*Vide* Fig. 6 p. 42). Some rain-water was caught and preserved as usual. On this occasion there had been heavy and continuous rain for nearly twenty-four hours previous to the collection, and the locality was different, the basin being balanced on the top of a railing about three feet high, surrounding a flat roof 22 feet from the ground.

Specimen obtained in a different locality.

Two days afterwards some minute whitish flocculi began to make their appearance in it, but the fluid otherwise remained perfectly clear. On the following day when the bell-glass was removed the flocculi presented a distinct brownish tint to the naked eye, and were, for the greater part, adherent to the sides of the basin. They were composed of mycelial filaments, in some places colourless and in others pale brown. The constituent cells were thick walled and varied greatly in length, for, while towards the extremities of the filaments they were elongated and in the case of the terminal ones often more or less clavate, the majority were very short, often somewhat swollen and in some places passing into chains of distinct circular conidia. (*Vide* Fig. 6, 2). Many free conidial cells, similar to those in the course of the filaments, were also free in the fluid, the younger specimens being almost colourless and the older of a decided olive-green hue and showing various stages of division in their contents. In many of the filaments the protoplasm was broken up into globules, granules, and bacteroid bodies, whilst in the surrounding fluid there was a copious sprinkling of active and still bacteria. Among the flocculi a few particles of sand, amorphous masses, and one or two starch grains were visible.

Characters of mycelium appearing in it.

The last experiment having shown the presence of distinct, active bacteria in the rain-water, several more were tried lest the fact in that case might have been due to water splashed from the surface on which the basin was set, and therefore virtually producing contact inoculation. In order as much as possible to diminish the chance of such an occurrence, a metal rod of over 5 feet in height was chosen as the means of support for the vessel used in collecting the water.

Presence of active bacteria.

Experiment IV.—A small clean glass bottle was filled with spirit and allowed to stand for a short time, the spirit was next emptied out, the bottle firmly fastened to the rod, washed with spirit both externally and internally, and dried by setting fire to the latter and burning it off. A small glass funnel, which had been similarly treated, was then inserted into the neck of the bottle by means of a pair of forceps which had just cooled from a red heat, and the whole apparatus was finally set on the roof at the commencement of a very heavy thunder-shower following two days of bright, sunny weather. Sufficient rain fell to fill the bottle completely up. On being removed from the rod the bottle was placed under a waxed bell-glass as usual, after having been washed over externally with spirit. Seventy-two hours afterwards a few minute white flocculi were visible, adhering to the sides; and, on the following day, there was also a slight cloud on the surface of the fluid, becoming visible on agitation causing it to sink downwards. Owing to the shape of the bottle it was difficult to procure good specimens of the flocculi, but such as were obtained were found to consist of brownish filaments, like those in the preceding specimen, with numerous bacteroid bodies adherent to them and active bacteria swimming in the fluid around. The cloudy appearance at the surface was due to the presence of numerous still specimens of *Bacterium termo*, mingled with a few active individuals.

Rain of a thunder-shower collected.

Active bacteria developed in it.

Experiment V.—The use of a bottle being found inconvenient in various ways, recourse was again had to the glass basins previously employed. The chief difficulty lay in securing them to the top of the metal rod, but this was overcome by means of fixing to the latter three diverging curved portions, united at the top by a ring of wire of sufficient size to include the lower part of the basin and hold it securely in position. This, together with the upper part of the rod, was next passed through the flame of a spirit lamp, and the whole apparatus was then firmly secured in a vertical position at one corner of the roof. A basin was then prepared as usual, and transferred to the rod by means of a heated pair of forceps. This

Apparatus securing absence of splashing.

was done early one morning, after a night of heavy and continuous rain which still persisted. About an ounce of fluid having been secured, the basin was removed by means of a pair of forceps as before and sealed beneath a bell-glass.

Appearance of a flocculus of mycelium.

Three days afterwards a light bluish white flocculus had begun to appear on the surface, and on the following day it had considerably increased in size. At this time, however, the wax securing the bell-glass became partially detached, and a minute yellowish fly obtained an entrance, fell into the water and was drowned. This accident of course almost entirely destroyed the value of the experiment, but, nevertheless, on the following day, the flocculus, which fortunately was at some distance from the insect, was removed and examined. It was found to consist of mycelium, arising in some cases from large septate spores, and in others from smaller rounded ones. Many of the filaments of the latter were identical with those present in the two previous experiments, and like them bore numerous greenish circular conidia at intervals in their lengths. The protoplasmic contents were generally broken up into globules, and in many places the filaments were disintegrating and thickly coated with gelatinous matter and bacteroid particles. No active bacteria could be detected.

Specimen free from mycelium, &c.

Experiment VI.—Immediately on the removal of the basin, in the previous experiment, it was replaced by another, as the rain continued to fall heavily. This was exposed for about two hours, and nearly an ounce of water was collected, containing a few small carbonaceous particles visible to the naked eye. It was covered and sealed as usual, and remained untouched for the same period as the other specimen. No flocculi appeared in it, and, in spite of careful examination, neither mycelium, spores nor bacteria could be detected in it.

Absence of fungi, &c., in specimens preserved for 3 weeks.

Experiments VII and VIII.—On two separate occasions a test tube was exposed, attached to the summit of another metal rod. In one case, about half a drachm, and in the other a few minims of rain, were collected. The tubes were immediately closed hermetically by means of corks which had been immersed in strong spirit for several months, dipped in melted wax before insertion, and thickly covered with more of the same material. They remained untouched for three weeks, and at the end of that period neither spores, mycelium, nor bacteria could be detected in the fluid, which remained perfectly clear and free from the faintest trace of flocculi or cloudiness

Specimen containing spores and mycelium.

Presence of active bacteria.

Active zoospores.

Experiment IX.—A basin was exposed as usual on the rod, for two hours during heavy rain which had begun one hour previous to the exposure. There had been several heavy showers on the afternoon of the preceding day, and some rain had also fallen during the night. The specimen was sealed as usual, and, in order to make the contact between the wax and the surfaces of the bell-glass and saucer as thorough as possible, a red hot metal rod was carefully applied all round so as to melt the wax, whilst pressure was applied from above. After five days the cover was removed. A few particles were floating in the fluid, but there were no flocculi visible. The particles were found to consist of the common constituents of air-dust, fragments of cotton fibres, particles of carbon, &c. On carefully scraping the bottom of the vessel with the point of a needle which had been heated to redness a few minutes previously, a little delicate filamentous matter was collected. This consisted of mycelial filaments arising from specimens of the common large atmospheric septate spores. Some of the filaments were full of fresh refractive protoplasm; in others the latter was in detached globules and granules of various sizes, and others were quite empty and more or less disintegrated. Those in the latter conditions were thickly coated with gelatinous matter, containing an abundance of globules and still bacteroid bodies. Numerous active bacteria also swam backwards and forwards in the surrounding fluid. In the course of some of the filaments there were macroconidial cysts, while other bodies of a similar appearance were free in the fluid, accompanied by active zoospores. Both cysts and zoospores were, as a rule, of somewhat smaller size than those in Experiment II, but some of equal size to those in it were also present. In this case, too, the change from the astasic to the amœboid condition was observed to take place. One or two atmospheric spores, which had not germinated, were observed, together with three bright green cells of small size, one of which was long-oval, the other two rounded in form.

Filaments adherent to the bottom of the vessel.

Experiment X.—A second specimen was collected immediately after the other and sealed in the same way. It also remained untouched for five days. In general appearance, it very closely resembled the former one, showing some suspended particles of carbon, &c., but no flocculi. Here, too, a little filamentous matter, consisting of mycelium, was scraped from the bottom of the basin. Some of this arose from large septate spores; one specimen bore oval sporidia on the summit of clavate lateral branches, and one patch was similar to that occurring in Experiment III, and like it had short joints and greenish conidia; another resembled that in Experiment IX, but was not accompanied by macroconidia or zoospores. In many cases, the filaments contained protoplasm broken up into fragments, or were empty and disintegrating, and here, as usual, gelatinous matter and bacteroid bodies surrounded them. Large numbers of active bacteria were also present. One mass of disintegrating toruloid cells, a large starch corpuscle, and some short fragments of hairs were also observed.

Results agree with those of Mr. Samuelson.

Difficulty in accounting for presence of bacteria.

On reviewing the results of these experiments as a whole, it will be seen that they agree very closely with those obtained by Mr. Samuelson and described in the first section of this report. As in his experiments, spores, mycelium, monads, bacteria and bodies resembling cercomonads and amœbæ made their appearance, not, however, being accompanied by any higher infusorial forms, as was the case in some of his specimens. In seven out of the ten experiments spores and mycelium were observed, and in six of these they were accompanied by monads and bacteria or bacteroid bodies, or both. The spores belonged to forms of common, almost constant, occurrence in specimens of atmospheric dust collected by means of the aeroscope, and their presence may, therefore, be fairly ascribed to their introduction into the rain as it fell, but there is more apparent difficulty in accounting for the presence of bacteria, seeing that such organisms are rarely to be detected in the air. It is no doubt true that they sometimes are present, and it is possible that they may be so constantly and yet not recognisable, due either to alterations in their form dependent on drying, or to their presence in germinal conditions alone; and if the great differences in size and appearance presented by fungal spores, as compared with the fully developed plant resulting from their germination be remembered, it is clear that it is almost useless to expect to be able to recognise and distinguish the presence of bódies of such extreme minuteness as the germs of bacteria must be. But even were they recognisable in atmospheric dust, a difficulty would yet remain in accounting for their multiplication and activity in specimens of fluid like those described above, for various observations are on record by trustworthy authorities, tending to show that bacteria and their germs are deprived of vitality by desiccation. Their presence in the rain-water may, however, be capable of explanation even allowing of their absence from the air, or at all events their absence from it in a living condition.

Views regarding nature and origin of bacteria.

The views which prevail at present regarding the nature of bacteria, their mode of origin, and their relation to other organisms, are various, but may, in the main, be referred to three groups or classes. The first and oldest doctrine regards bacteria as independent organisms, multiplying and "breeding true," and never appearing in any medium save as the result of their direct introduction in a developed or germinal condition. DeBary,[1] Hoffmann,[2] Burdon Sanderson[3] and Rindfleisch[4] may be taken as representatives of its adherents. A second school of observers, including Professor Huxley[1], Hallier[2], Lüders[3], Karsten[4], Polotebnow[5] and Lister[6] maintains that bacteria are derived from other dissimilar bodies, and specially from fungi. The three first authorities regard them as normal terms in the course of the development of fungi, and as capable of reproducing the higher forms from which they are derived; but Karsten, who considers them as "secretion cells" derived from animal and vegetable cells of any kind, and Polotebnow, who believes in their origin from the spores and mycelium of *Penicillium* and other similar fungi, agree in regarding them as incapable of reproducing their parent forms, whilst the latter author even denies their capacity for multiplication or reproduction of any kind whatever. Professor Cohn, in some degree at all events, favours the views of this school, inasmuch as his observations lead him to consider it possible that bacteria may be stages in the development of organisms similar in nature to *Crenothrix*[7]. The third and last doctrine regards them as arising by so-called "spontaneous generation" or abiogenesis and heterogenesis. Bastian[8] and Grimm[9] support this view, the former believing them as well capable of multiplication and reproduction of their kind as of giving origin to higher forms of life, and the latter being now prepared, at all events to allow of their direct multiplication by division, a process the existence of which he formerly denied[10].

---

[1] Bericht über die in den Cholera-Ausleerungen Vorgefundenen Pilze. Von Prof. De Bary in Halle.

[2] "Der gegenwärtige Standpunkt der Mycologie, &c." Von Dr. Eduard Eidam, Berlin, 1872, page 190.

[3] App. to "Thirteenth Report of the Medical Officer of the Privy Council."

[4] Eidam. o. cit. page 197. The author here states that Prof. Rindfleisch regards bacteria as incapable of division.

Points of agreement in certain doctrines.

Conveyance of bacteria by the air the important practical question.

The two latter doctrines have so much in common in that they agree in deriving bacteria from other dissimilar bodies, but even here they differ in detail, the one regarding this mode of origin as a normal process of development of certain organisms either in a progressive or retrograde direction, whilst the other looks upon it as an accidental process, and one which, when it does occur, is not a normal term in the development of the parent organisms, but a formation of new, different organisms out of the material furnished by the former ones. Either of them, however, will satisfactorily explain the appearance of bacteria in the present experiments, and, from a practical point of view, the real question of importance does not concern the precise genetic relation of bacteria to the bodies from which they appear to arise, but rather the presence of any bodies in the atmosphere capable of giving origin to them in any way. If they can arise from spores or mycelium, there can be no doubt that the air, in this part of the world at any rate, is a great magazine capable of supplying them to, and accounting for, their appearance in putrescible materials however carefully the latter may be shielded from contact contamination, for spores of various kinds are almost constantly present in it in very considerable numbers. The view that they do so arise appears to derive some confirmation from the present experiments, for in those cases in which no spores or mycelium could be found, bacteria also appeared to be absent, and the appearance and multiplication of the latter in every case occurred coincidently with changes in the protoplasm of the mycelial filaments arising from recognisable atmospheric spores. Of the four specimens free from bacteria and bacteroid bodies, only one contained spores or filaments, the absence of which in the other three was probably due in one case (Experiment VI) to the fact that the specimen was collected after a period of continuous heavy rain, and in the other two (Experiments VII and VIII) to the small surface exposed and the consequent small amount of water collected. That a specimen (Experiment I) should contain spores and mycelium

---

"Quarterly Journal of Microscopical Science." Vol. X, page 355.

"Gahrungserscheinungen, &c.," Leipzig., 1867.

"Quarterly Journal of Microscopical Science." Vol. IX, page 32.

"Chemismus der Pflanzenzelle." Wien, 1869.

"Über den Ursprung und die Vermehrung der Bacterien." Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Wien, 1869.

[6] "Abstract of a communication to the Royal Society of Edinburgh." Nature, July 10th, 1873, page 212.

[7] Beiträge zur Biologie d. Pfl., Breslau, 1870.

[8] "The Beginnings of Life" by Professor H. C. Bastian, Macmillan and Co., 1872.

"Zur Naturgeschichte der Vibrionen." Von Oscar Grimm in St. Petersburg, Schultze's Archiv, Bd. VIII, page 514.

[10] "Nachträgliche Bemerkungen, &c.," Op. cit. Bd. IX, page 118.

Presence of spores, &c., without bacteria, no proof of absence of connection between them.

Phenomena accompanying appearance of bacteria.

May be accounted for by the doctrine of the origin of bacteria from other bodies.

and yet no bacteria is no real argument against the origin of the latter from the former in other instances, for the conditions may vary in different cases, in some favouring continuous growth of mycelial filaments, and in others the development of bacteria, either homogenetically or heterogenetically from them. Because in some cases nothing but the common typical fructification of *Aspergillus* appears on certain patches of the mould, it is not denied that the eurotial fructification is capable of arising from a similar mycelial basis under other circumstances. The occurrence of astasic and amœboid zoospores in two of the preparations appears, moreover, to favour the mycelial origin of the bacteria accompanying them, for they, too, are absent as recognisable elements in atmospheric dust, and were actually observed to arise from the mycelial filaments belonging to spores similar to those constantly occurring in it, and although the process of development could not so clearly be followed out in the case of the bacteria, the appearances presented were sufficient, at all events, very strongly to suggest a similar origin for them also. As far as could be ascertained, the course of the phenomena accompanying their appearance was as follows. The original homogeneous protoplasm in the filaments became broken up into separate portions, some of which were rounded and others elongated, while a third form appeared to consist of two refractive globules united by an intermediate more delicate portion. Where the process was more advanced the exterior of the filaments was thickly coated with a gelatinous layer containing numerous bodies, which in appearance very closely resembled those in the interior, and which, together with their basis, seemed to form a species of *Zooglœa*. At a later stage many of the filaments were quite empty, and numbers of the bacteroid bodies were free in the fluid although still motionless, whilst in other cases they were mingled with active specimens of bacteria, swimming rapidly backwards and forwards. All these appearances may be explained on the supposition that bacteria really do arise from dissimilar bodies, but at the same time they may be differently interpreted by those, who, with Dr. Beale,[1] believe in the universal interpenetration of higher organisms with the germs of lower ones, ready to grow and multiply at any moment when favourable conditions are presented to them; still, even if this were the case, the presence of the bacteria would be due to the atmosphere.

Absence of other Infusoria.

While, however, these preparations showed bacteria, spores and bodies directly derived from the latter, they agreed with those belonging to all the other series of experiments in showing an entire absence of any higher infusorial organisms, and were at complete variance with Ehrenberg's statements regarding the preponderance of animal over vegetable life in the atmosphere. They, moreover, clearly demonstrated the enormous fallacy in all those calculations regarding the absolute number of organisms present in the atmosphere, having as their basis the assumption that all bodies present *after some time* in a fluid which has been exposed to the air, were present as such in the atmosphere. They may be said to have been potentially present, but they were assuredly not necessarily actually so, for, in the present preparations, many filaments were observed to arise from isolated spores, and to give origin to numerous secondary cells, and even, in some cases, to become entirely resolved into chains of conidia—bodies which were present in multitudes in *some* specimens, and in far greater number than the spores from which they arose in almost *all*—but it was evident that the great majority of them belonged to the fluid, and not to the air which had merely supplied their parent cells. A single seed is capable of giving rise to a plant bearing multitudes of new seeds, and it would be just as rational to calculate that the number orginally sown must equal that subsequently produced, as it is to estimate the number of spores present in a given bulk of air from that of those developed in a medium which has been exposed to its influence.

---

[1] "Disease germs, their Nature and Origin," by Lionel S. Beale, M. B., F. R. S., Churchill, 1872.

The conclusions to be derived from this series of experiments would appear to be as follow :—

Conclusions.

1.—Specimens of rain-water in Calcutta, collected with every precaution to ensure their freedom from contact contamination, sooner or later frequently show the presence of spores, mycelium, zoospores, monads, bacteroid bodies, and distinct bacteria.

2.—They do not, as a rule, contain any of the higher forms of infusoria.

3.—The zoospores are demonstrably derived from the mycelium arising from common atmospheric spores.

4.—There is every probability that the monads and bacteria have a similar origin, but it remains quite uncertain whether their development is due to Heterogenesis, or to the presence of their germs within their parent cells, or as the result of a process of normal development in the latter.

SECTION VIII.

OBSERVATIONS ON THE BODIES PRESENT IN THE AIR OF SEWERS.

Locality from which specimens were obtained.

A few observations were made in regard to this point, as the air of sewers affords a good basis for the comparison of the characters of common atmospheric air with those of one of known deleterious properties. In procuring specimens of it, it is necessary to secure that they really are typical specimens, and not mere mixtures of sewer air with that of the surrounding locality; and, in order to do so, it is necessary that they should be collected actually within the sewer, and not merely at some opening from which sewer emanations escape. I owe it entirely to the ready assistance afforded to me by Mr. W. Clark, C.E., the Engineer to the Calcutta Municipality, that I was enabled to procure such specimens. On applying to him regarding the possibility of conducting observations on the sewer air, he suggested, as a good locality for the collecting apparatus, a ventilating flue in connection with the silt-pits of the pumping station of the great Calcutta sewers, where the contents are raised to a level allowing of their discharge into the Salt Water Lakes' channel. The accompanying Fig. 8, reduced from a plan furnished by Mr. Clark, will show the nature of this flue and of the locality where the apparatus was placed in procuring the specimens.

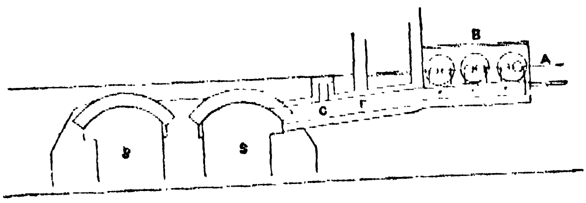


Fig. 8.—Section of the Silt-Pits &c., of the Calcutta drainage: S. S, Silt-Pits: B. boilers: F, air-flue from Silt-Pits to furnace: C, position of the Aeroscope in the air-flue.

The air passing along the flue ought certainly to afford a good sample of the characters of that in the sewers, coming, as it does, from the pits in which the sewage from all the new drains of Calcutta unites, previous to being raised to the high level by the pumps. Eight experiments were tried with the following results :—

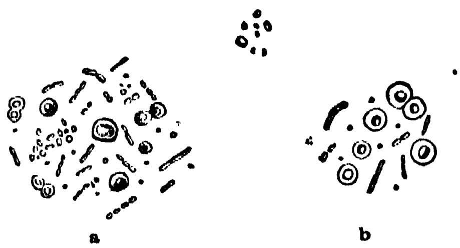


FIG. 9.—Spores and Bacteria from Sewer-air. Magnified 1,000 diameters.

Experiment I.—Fig. 9 a. The aeroscope having been carefully cleaned and prepared as usual was set in the flue on the 18th of June 1873 and allowed to remain there for 24 hours.* A little dust was visible in the preparation when examined by the naked eye.

Specimen containing bacteria, vibriones, oily matter, &c.

The microscope showed a scanty sprinkling of angular silicious particles and amorphous brown masses like those ordinarily present in atmospheric dust. There were also some carbonaceous fragments and a few minute portions of woody tissue. There was an abundance of oily flakes and globules, and the whole preparation was full of fine grey molecules and granules. A few greenish cellules, apparently the spores of *Aspergillus*, and one or two fungal cells of other kinds were also present, together with some short vibrionic staves, and one or two minute bacteria Fig. 9 a. Neither vibriones nor bacteria showed any motion, but this may have been due to their immersion in glycerine.

Experiment II.—The apparatus was set as before on the 21st of June and removed after 24 hours' exposure. The instrument used in this case was a perfectly new one, and on being removed was found to have been much affected by the sewer gases, the brass being blackened, and the iron rod supporting the axis being very much rusted.

Bacteria and spores.

The glass showed a little dust visible to the naked eye. Microscopical examination revealed the presence of numerous carbonaceous, silicious, and amorphous particles, together with a large fragment of woody fibre. There was a great abundance of greyish molecules, a sprinkling of motionless bacteria and vibriones and of spores of *Aspergillus* Fig. 9 b, together with some very delicate yellowish membranous flakes and one or two delicate structureless filaments.

Bacteria, spores, and molecular matter.

Experiment III.—The apparatus was set at the pumping station on the 24th of June and removed after 24 hours. Hardly a trace of dust was visible to the naked eye. There were scarcely any silicious, carbonaceous or amorphous bodies in it. Oily globules were present in great abundance, the larger ones of a yellowish tint and the smaller colourless. One or two pieces of silk fibre, an insect scale, and a small quantity of greenish-yellow granular matter were also detected. Distinct bacteria occurred in considerable numbers, together with spores of *Aspergillus* and *Penicillium* and a great abundance of fine molecular matter Fig. 10.

---

* In these experiments the short portable stem described in the previous section was employed in order to hold the apparatus.

Specimen free from bacteria.

Experiment IV.—The apparatus was exposed as usual for 24 hours on the 27th and 28th of June. The preparation contained hardly any dust visible to the naked eye. Microscopical examination showed the usual carbonaceous and amorphous particles, with a few angular fragments of silica. Neither oil globules nor bacteria were detected, but there was an abundance of minute greyish molecules.

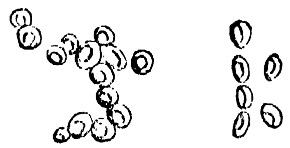


Fig. 10.—Spores of *Aspergillus* and *Penicillium*. Magnified 1,000 diameters.

Feculent matter present.

Experiment V.—The apparatus was exposed for 24 hours on the 4th and 5th of July. The preparation showed a sprinkling of dust visible to the naked eye and contained one speck of brownish colour which readily flattened out on pressure into a minute flake. A very large quantity of fine molecular matter was evenly distributed throughout every portion of the surface, and a few distinct specimens of *Bacterium termo* were likewise present. Fragments of silica, carbon, and brownish amorphous matter were present as usual in small amount. On examining the flake previously mentioned, it was found to be composed of what appeared to be feculent matter, containing amorphous matter, hairs, and other vegetable *débris*, small zooglœa-like masses, and several ova and minute nematoid worms.

Experiment VI.—The apparatus was again exposed for 48 hours on the 12th, 13th and 14th July. There was no dust visible to the naked eye, but there was a general cloudiness of the preparation shown by the microscope to be due to an extreme profusion of grey molecular matter. Only a very few and minute fragments of silica, carbon, and amorphous matter were present. There was also a tolerably abundant sprinkling of spores of *Aspergillus glaucus* and a few bacteria.

Absence of bacteria.

Experiment VII.—The apparatus was again exposed for 48 hours at the pumping station on the 22nd, 23rd, and 24th July. The preparation contained the usual sprinkling of amorphous particles, with a few angular fragments of silica and carbon, and some small granular aggregations of the latter. One cotton fibre, a sprinkling of the spores of *Aspergillus* and one or two fungoid cellules of other kinds were present, but no distinct bacteria were detected. As usual, there was a generally diffused sprinkling of rounded and irregular, greyish molecules and minute particles.

Bacteria absent at first and not developed afterwards.

Experiment VIII.—The apparatus was once more exposed for 48 hours on July 31st and August 1st and 2nd. Molecular matter was present in very great abundance. No distinct bacteria were detected at first, nor did any appear within four days afterwards. A few spores of *Aspergillus* and some very minute fungoid cellules occurred here and there. The preparation also contained a scanty sprinkling of the common silicious, carbonaceous, and amorphous bodies and one or two fragments of fibres of various kinds.

Principal features characteristic of the series of specimens.

The principal features characterising the series were the comparatively small quantity of the common coarser constituents of dust in the form of silica &c.; the presence of oily matter in considerable quantity in several of the preparations; the existence of distinct bacteria in four out of the eight specimens; the constancy of the presence of greenish cellules apparently the spores of *Aspergillus*; and the prominent feature imparted by the relative abundance of fine molecular matter. That sand and other bodies generally forming a large proportion of the particles suspended in the outer air should be almost absent in the damp air of sewers is not to be wondered at, and is quite in accordance with the facts observed in the other series of experiments regarding the influence of rain and moist weather. The existence of oily globules in these preparations is interesting, taken in connection with the fact that "fatty matters can be readily recognised" in the gases of decomposition, and that "they require a greater time and more play of air for their complete conversion into inorganic substances" than the other organic atmospheric pollutions derived from the same source.* The existence of distinct bacteria in half of the specimens is also very worthy of consideration, when the extreme rarity of such organisms in a recognisable form, as a constituent of common atmospheric dust, is recollected. Their presence here accords with Cohn's observations on their conveyance by watery vapour,† and suggests that their apparent absence in ordinary atmospheric air is due, not to their not entering it in large quantities, but to the fact that unless the amount of watery vapour present is very great, they lose their characteristic appearance, by which in default of movement they can alone be recognised. The constant occurrence of the spores of *Aspergillus* and the great rarity of other fungal cells is naturally accounted for by the absence of higher vegetation within the sewers, preventing any direct supply of the spores of any of the epiphytic fungi, and by the extremely luxuriant development of *Aspergillus* in Calcutta in almost any situation affording a damp atmosphere and organic matter, conditions amply fulfilled on the sides of the sewers. How much of the molecular matter present in such abundance was really bacterial, and how much mere detritus must remain uncertain, but, whatever its nature, there can be little doubt that it as well as the bacteria was raised and carried by watery vapour.

SECTION IX.

CONCLUSIONS.

General results of all experiments.

The most important of the conclusions to be derived from all the preceding experiments regarding the dust contained in the atmosphere in the vicinity of Calcutta appear to be the following:—

1.—The aeroscope affords a very convenient method for obtaining specimens really representing the nature of the true atmospheric dust.

2.—Specimens of dust washed from exposed surfaces cannot be regarded as fair indices of the constituents of atmospheric dust, since they are liable to contain bodies which may have reached the surface otherwise than by means of the air, as well as others which are the result of local development.

3.—Specimens collected by gravitation also fail to indicate the nature and amount of organic cells contained in the atmosphere, as the heavier amorphous and inorganic constituents of the dust are deposited in relative excess due to the method of collection.

4.—Dew also fails to afford a good means of investigating the subject, as it is impossible to secure that all the bodies really present in a specimen of it should be collected into a sufficiently small space, and, moreover, because it is liable to accidental contaminations, and also affords a medium in which rapid growth and development are likely to take place.

5.—Distinct infusorial animalcules, their germs or ova are almost entirely absent from atmospheric dust and even from many specimens of dust collected from exposed surfaces.

---

* "Air & Rain," p. 477.

† Vide Section I.

6.—The cercomonads and amœbæ appearing in certain specimens of pure rain-water appear to be zoospores developed from the mycelial filaments arising from common atmospheric spores.

7.—Distinct bacteria can hardly ever be detected among the constituents of atmospheric dust, but fine molecules of uncertain nature are almost always present in abundance; they frequently appear in specimens of rain-water collected with all precautions to secure purity, and appear in many cases to arise from the mycelium developed from atmospheric spores.

8.—Distinct bacteria are frequently to be found amongst the particles deposited from the moist air of sewers, though almost entirely absent as constituents of common atmospheric dust.

9.—The addition of dry dust, which has been exposed to tropical heat, to putrescible fluids is followed by a rapid development of fungi and bacteria, although recognisable specimens of the latter are very rarely to be found in it while dry.

10.—Spores and other vegetable cells are constantly present in atmospheric dust, and usually occur in considerable numbers: the majority of them are living and capable of growth and development: the amount of them present in the air appears to be independent of conditions of velocity and direction of wind: and their numbers are not diminished by moisture.

11.—No connection can be traced between the numbers of bacteria, spores, &c. present in the air and the occurrence of diarrhœa, dysentery, cholera, ague or dengue: nor between the presence or abundance of any special form or forms of cells, and the prevalence of any of these diseases.

12.—The amount of inorganic and amorphous particles and other débris suspended in the atmosphere is directly dependent on conditions of moisture and of velocity of wind.

Results compared with those of other observers.

If these results be compared with those obtained by other observers, and detailed in the first section of this report, it will be seen that they agree very closely with those of M. Robin, only differing from them in indicating the presence of a somewhat larger number of spores than appeared in his observations. They differ almost equally from those arrived at by Pouchet and Ehrenberg. It is somewhat difficult to understand how the former observer so constantly failed to detect the presence of spores in his experiments, but there is an apparent reason for Ehrenberg's observation of the predominance of animal forms in the atmosphere. His conclusions appear to have been almost entirely founded on the results of the examination of specimens of dust not directly obtained from the air, but from surfaces on which it had been previously deposited from the air, such as leaves, tufts of moss, &c. Now, as has already been indicated, it is certainly quite unwarrantable to assume that all organisms found in such specimens existed as such in the air, or were even derived from the air in any way. All such surfaces are more or less liable to contact-inoculation; leaves and moss, for example, are liable to this through the agency of insects or birds. Moreover, with regard to many of the organisms detected in such situations, it must be recollected that there is no reason why they should not have arrived there by means of active progression over the surface. When surfaces are wet with rain, there is no reason why Tardigrades, Rotifers, Anguillulæ and many infusoria should not travel over them from one point to another. The journey accomplished at any one time may be small, and its progress soon arrested by defective moisture; but, unless they are deprived of vitality in the interval by desiccation, they are ready for a fresh start when favourable conditions are again presented to them.

It is hardly safe to venture on the vexed questions regarding the origin of bacteria, but it may, at all events, be stated that the results of the present experiments are certainly not opposed to the belief in the transmission of these organisms in some way or other by means of the atmosphere; for they were actually observed among the particles in moist air, the addition of dry dust to putrescible fluids was followed by their rapid development, and they appeared in specimens of pure rain water.

Finer molecular matter of atmospheric dust may include particles of very different properties.

Although these observations may not appear to encourage the hope of success in discovering the presence of atmospheric particles connected with the origin of disease, it must not be forgotten that they only refer to bodies distinguishable from one another *whilst in the air*, the possibility remaining that many of the finer molecules present in it are really of different natures, and may yet be distinguished from one another by means of their actions or developments. Many interesting questions are suggested in connection with the fact of the presence of such considerable numbers of living cells in the air. What becomes of them when drawn into the respiratory cavities of animals? Is their vitality destroyed, and, if so, how are they got rid of? Are they ever capable of undergoing any development within the organism, and do they then exert any prejudicial influence on the recipient? These and similar questions can only be answered by means of patient and extended experiment, but even such imperfect and superficial observations as the present will I trust serve a useful purpose in clearing away a few of the preliminary obstacles from the path of investigation.

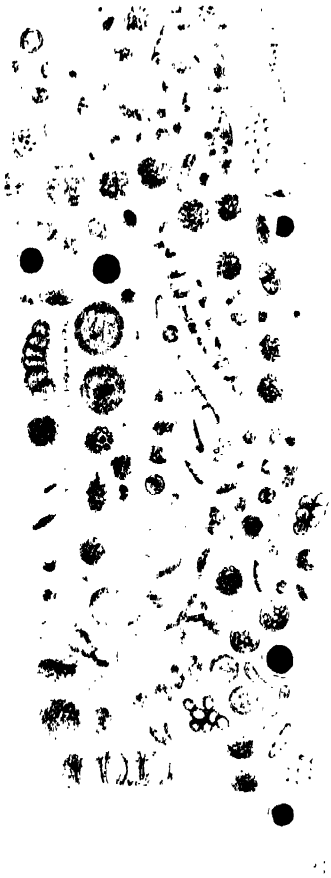


Fig. [illegible]

Feb. [illegible] Temp. [illegible] Wind S. S. W. and S.—Rain, 0.0.

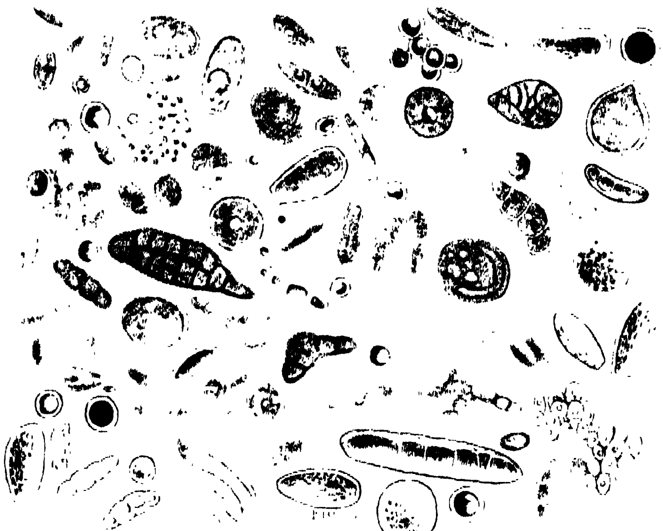


Fig. [illegible]

March [illegible].—Temp. [illegible].—Wind S. W. and W. N. W.—Rain, 0.[illegible]

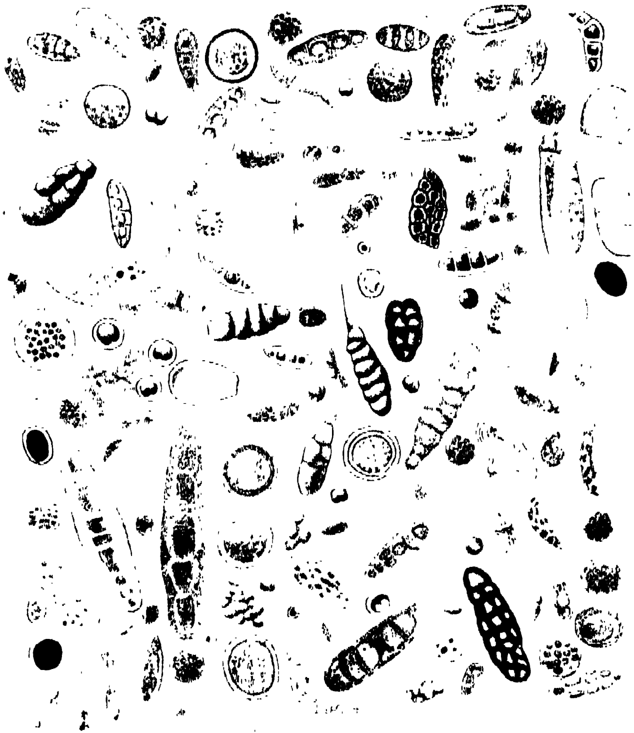


Fig. [illegible]

March [illegible].—Temp. [illegible].—Wind W. S. W. and W. N. W.—Rain, 0.0.

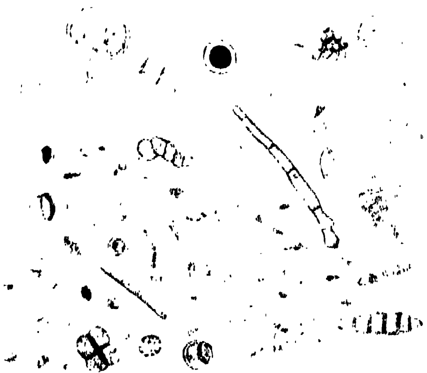


Fig. 2.

March 7.—Temp. [illegible].—Wind E. S. E. and S. S. W.—Rain, 0.0.

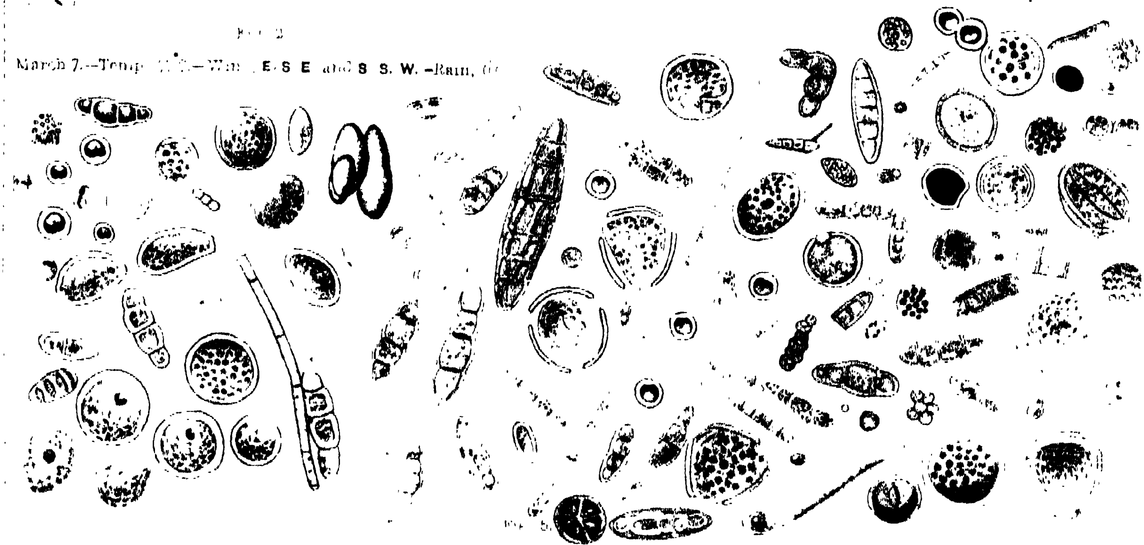


Fig. 5.

March [illegible].—Temp. [illegible].—Wind S. and S. S. W.—Rain, 0.0.

ATMOSPHERIC [illegible] Collected During Periods of Twenty-four Hours in FEBRUARY and MARCH, 187 Magnified 400 diame

(PRESIDENCY JAIL.)

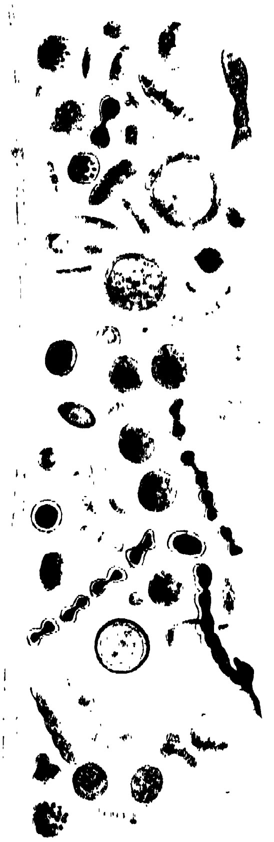


Fig. 1.

Feb. 26.—Temp. 71·0.—Wind, W. S. W. and S. W. Rain, 0·0.

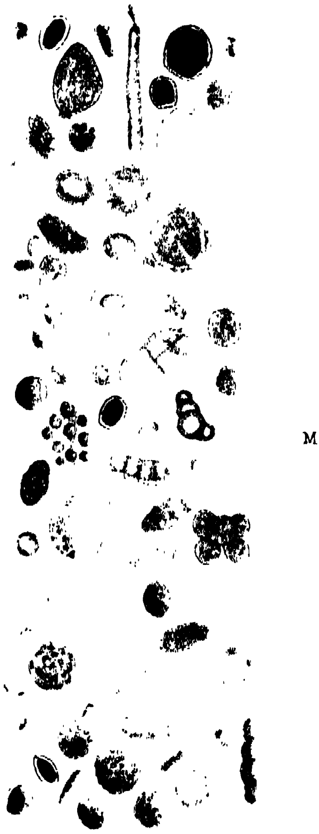


Fig. 2.

Feb. 27.—Temp. 7[illegible]·4.—Wind, S. S. W. and S. W. Rain.

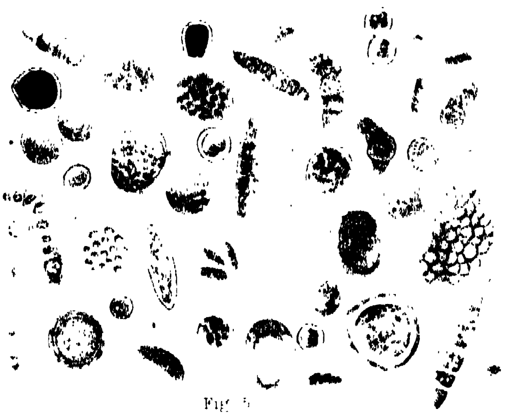


Fig. 5.

March [illegible].—Temp. 81·0.—Wind, S. S. W. and S. by W.—Rain, 0·0.

Fig. 3.

March 4.—Temp. 79·0.—Wind W. and W. S. W.—Rain 0·0.

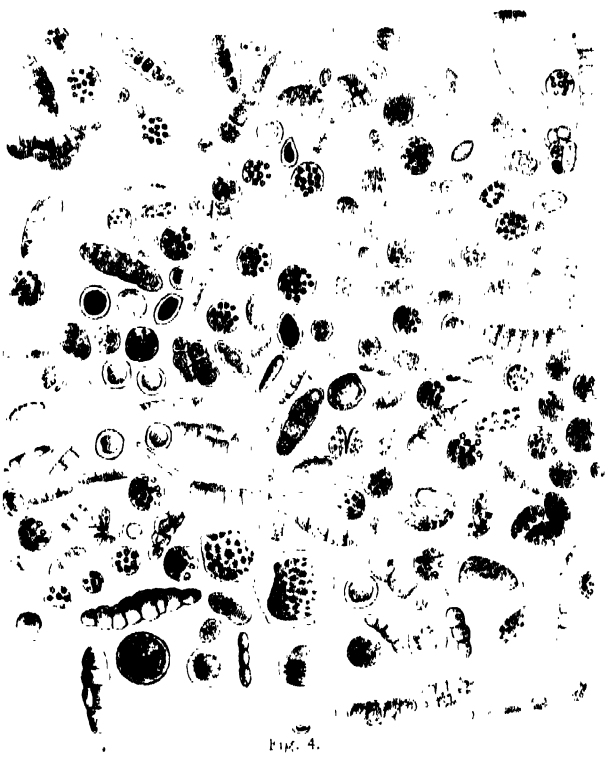


Fig. 4.

March 11.—Temp. 82·4.—Wind, S. W.—Rain, 0·0

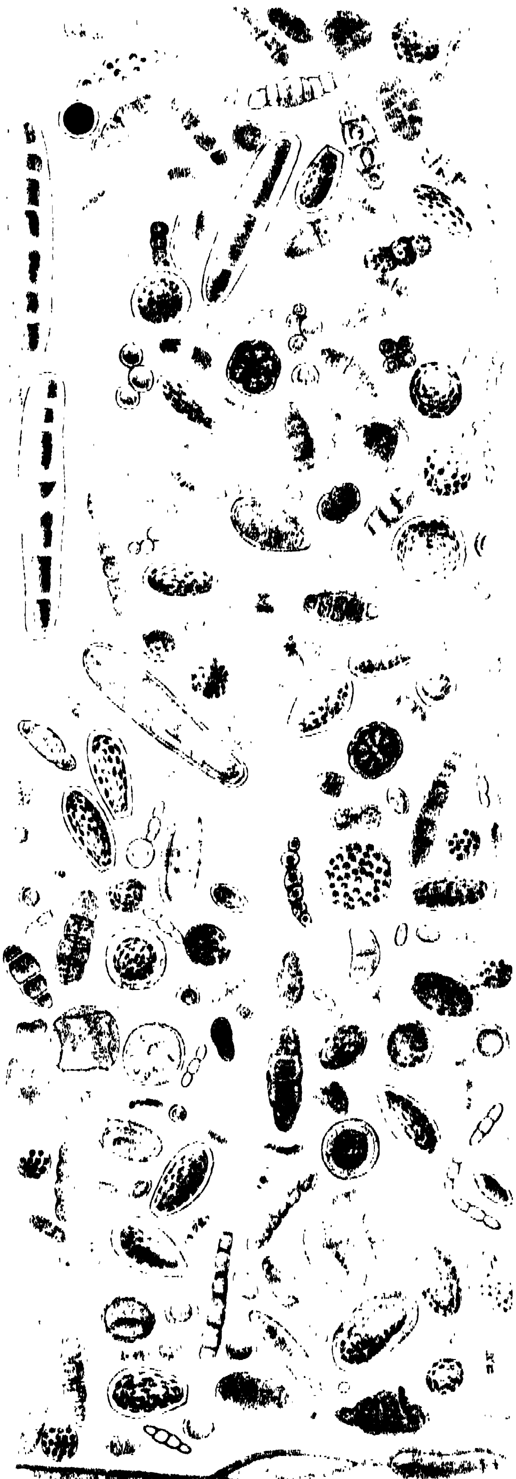
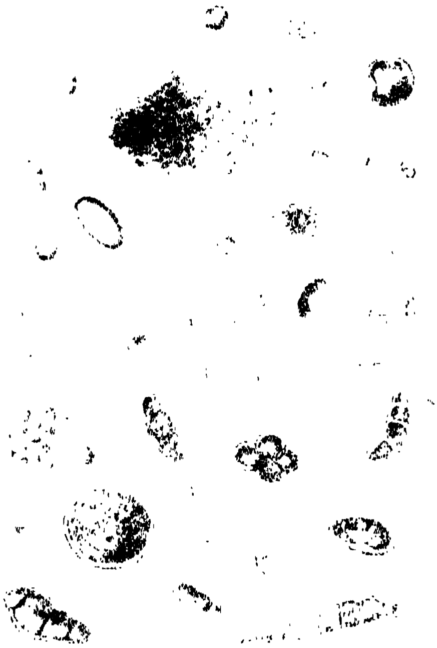
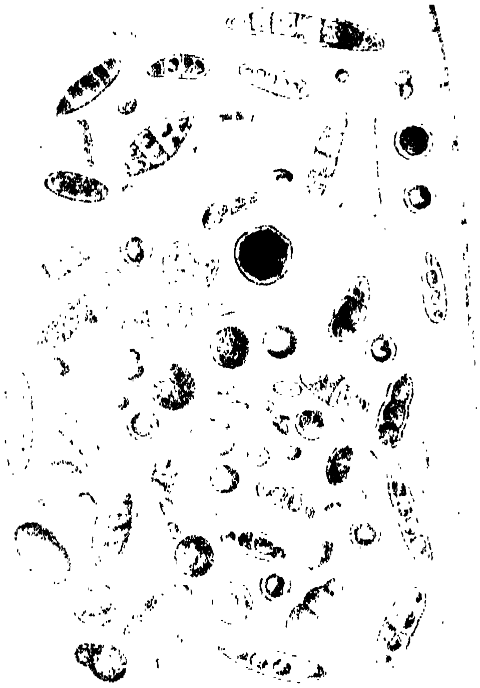


Fig. 6.

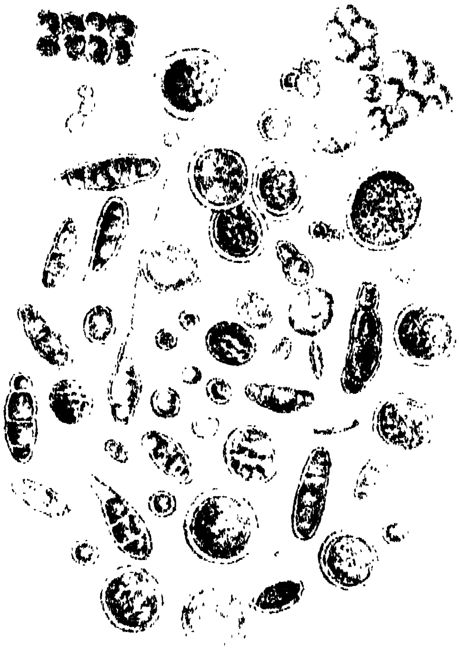
March 2[illegible].—Temp. 86·[illegible].—Wind, S. S. W. and S. by W. Rain, 0·0



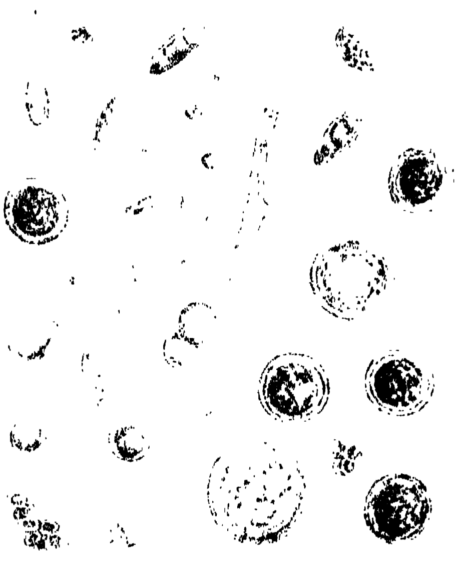
[illegible]



[illegible]



[illegible]



[illegible]

Fig. 1.

April 3.—Temp: 83°2.—Wind, W. S. W. and S. S. W.—R[illegible]

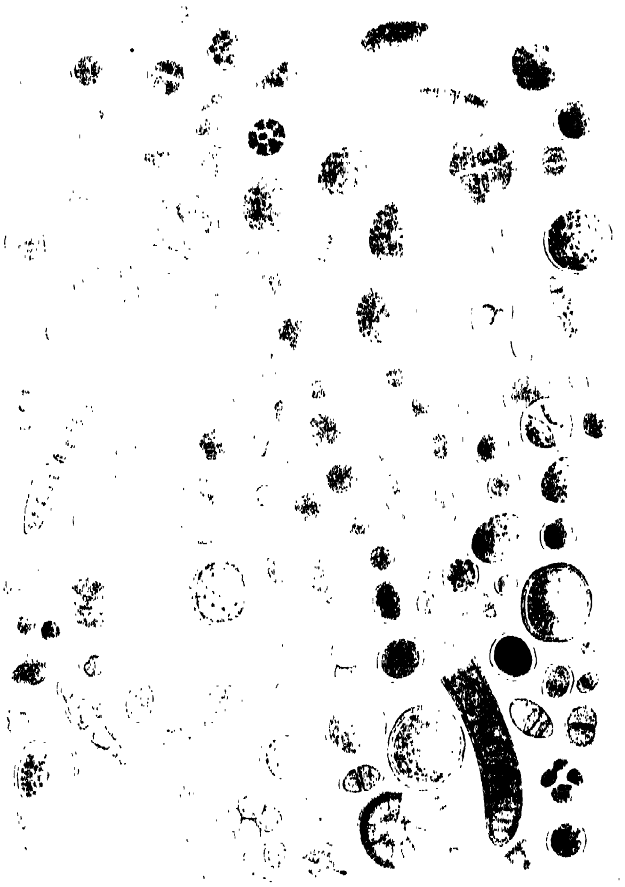


Fig. 2.

Ap[illegible] Wind, Variable.—Rain, 0·[illegible]

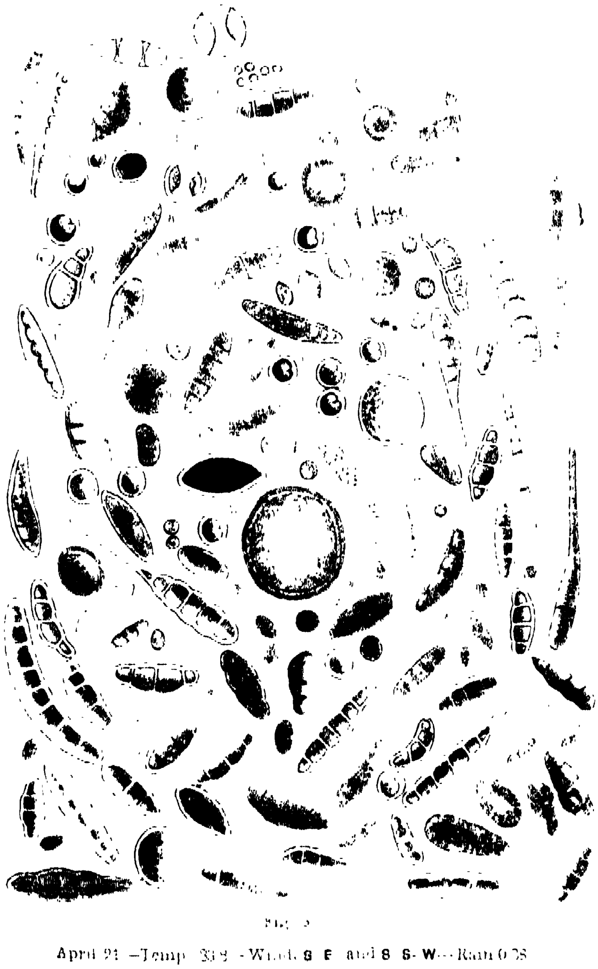


Fig. 3.

April 21.—Temp. 83°3.—Wind, S. E. and S. S. W.—Rain 0·08

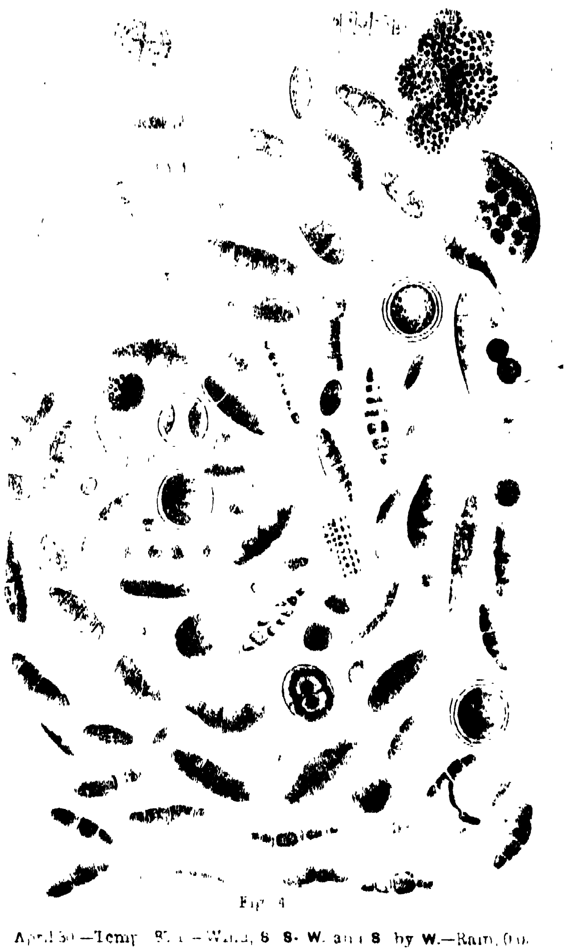
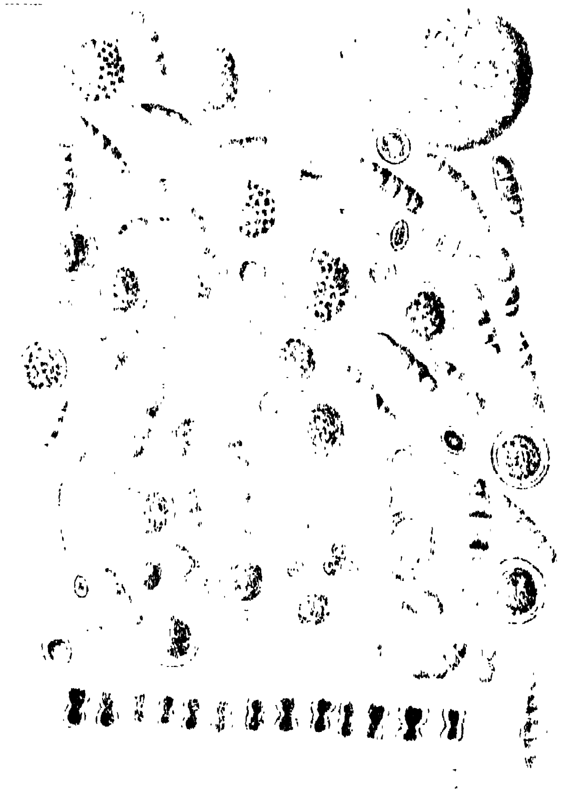


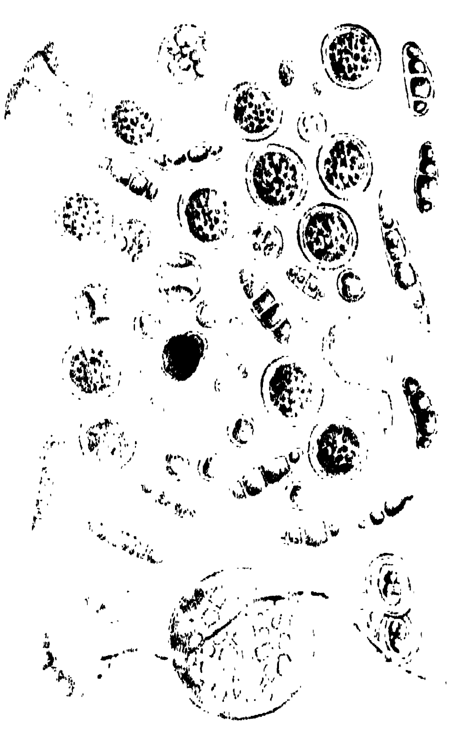
Fig. 4.

April 30.—Temp. 87°[illegible].—Wind, S. S. W. and S. by W.—Rain, 0·[illegible]



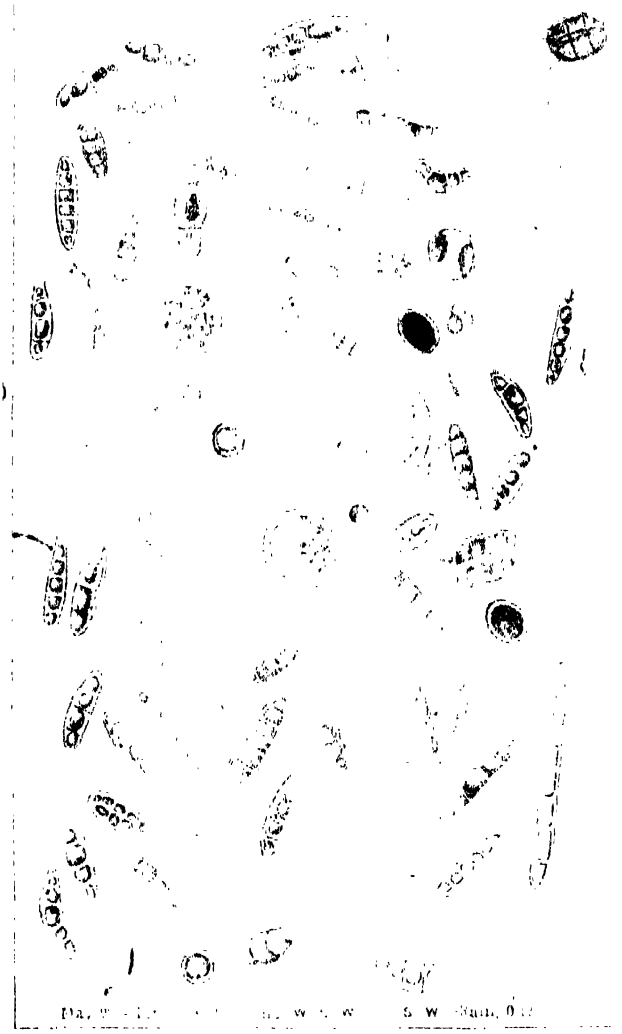
[illegible]

[illegible] W [illegible] S. E W.—Rain [illegible]

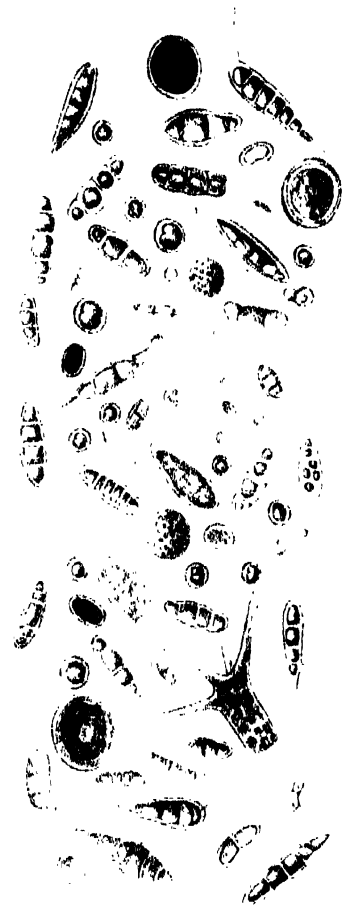


[illegible] 2

[illegible] E. S. E. and S. S. W.—Rain, 0·0



May [illegible] W [illegible] W [illegible] S. W.—Rain, 0·[illegible]



[illegible]

May [illegible] Wind S. by E. and S.—Rain 0·[illegible]

ATMO[illegible] Collected During [illegible] MAY 18[illegible] Magnified 400 diameters.

(PRESIDENCY JAIL.)

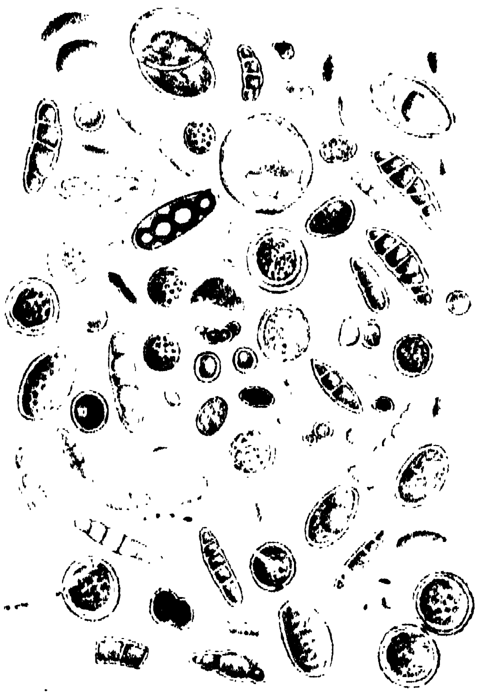
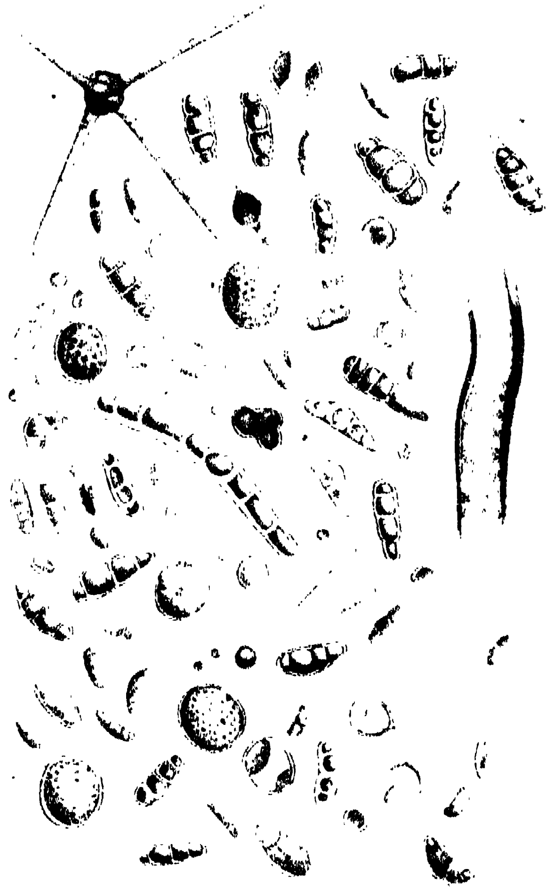
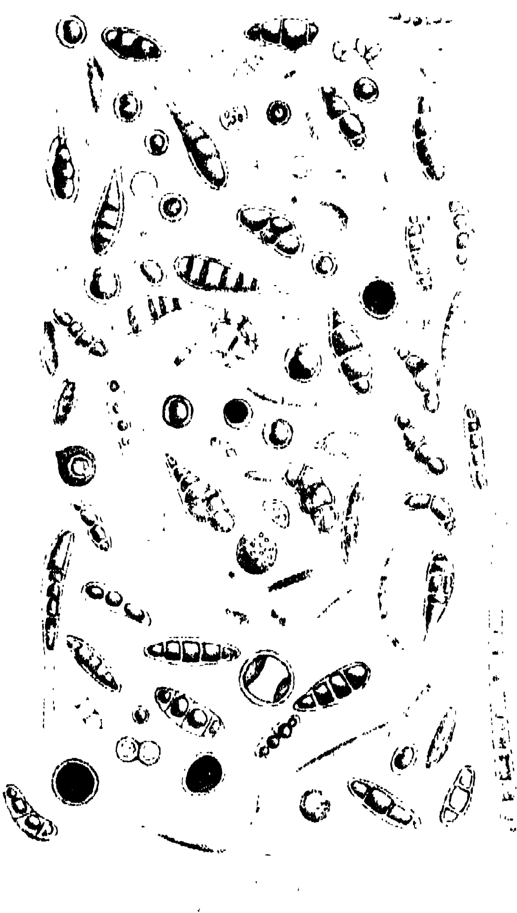


Fig. 1.

May 8. Temp. [illegible] Wind, S. E., S. by W. and S. Rain, [illegible]



May [illegible]. Temp., [illegible] Wind, S. S. W. and S. by W. Rain, [illegible]



May 1.—Temp. [illegible] Wind, S. and S. by W. Rain, [illegible]

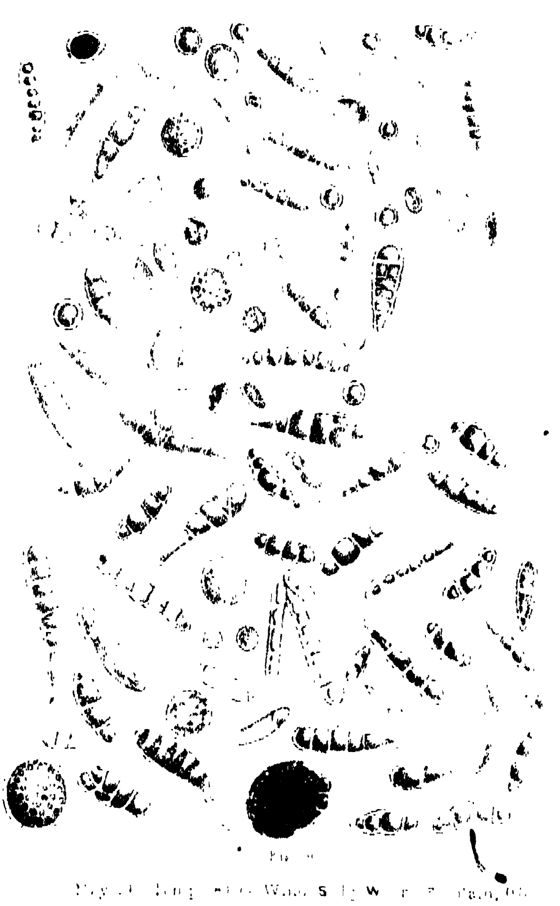


Fig. 4.

May [illegible]. Temp. [illegible] Wind, S. by W. [illegible] Rain, [illegible]

ATMOSPHERIC ORGANISMS, &c. Collected During Periods of Twenty-four Hours in MAY, 187[illegible]. Magnified [illegible] diameters.

(ALIPORE.)

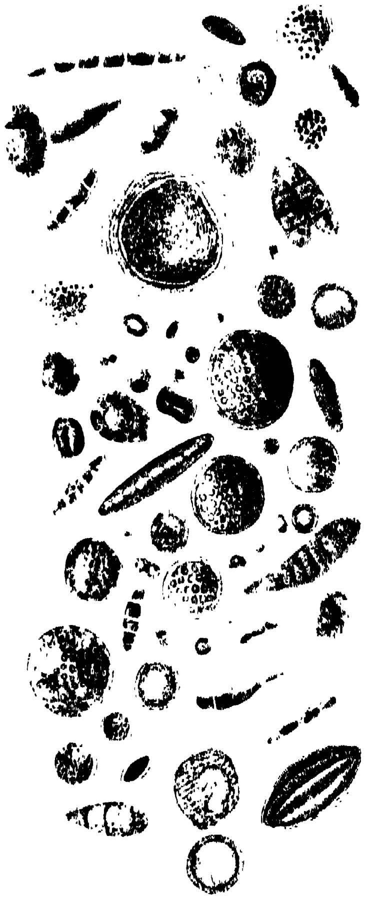


Fig. 1.

June 5.—Temp. [illegible]—Wind, S. by E. and S.—Rain, [illegible]

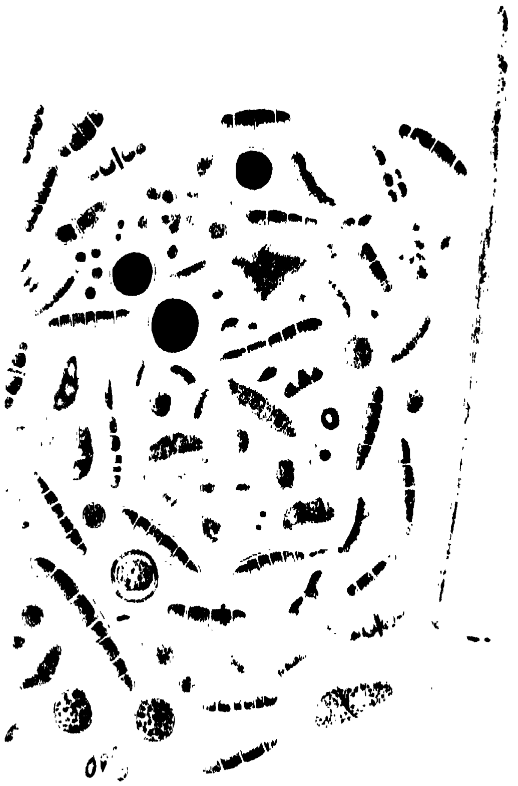


Fig. 2.

June 9.—Temp: 85·0. Wind, S. by W. and S. Rain, [illegible]

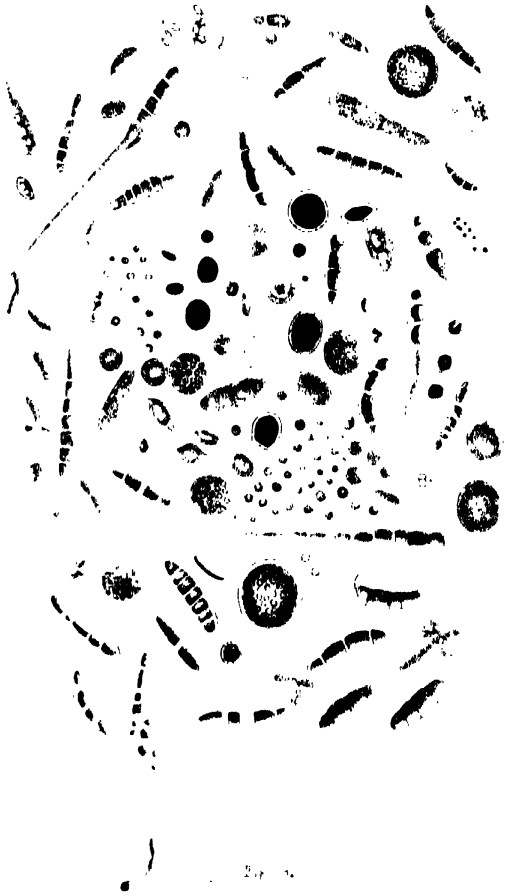


Fig. 3.

[illegible]—Temp. [illegible]—Wind, S. S. E. and S.—Rain, [illegible]

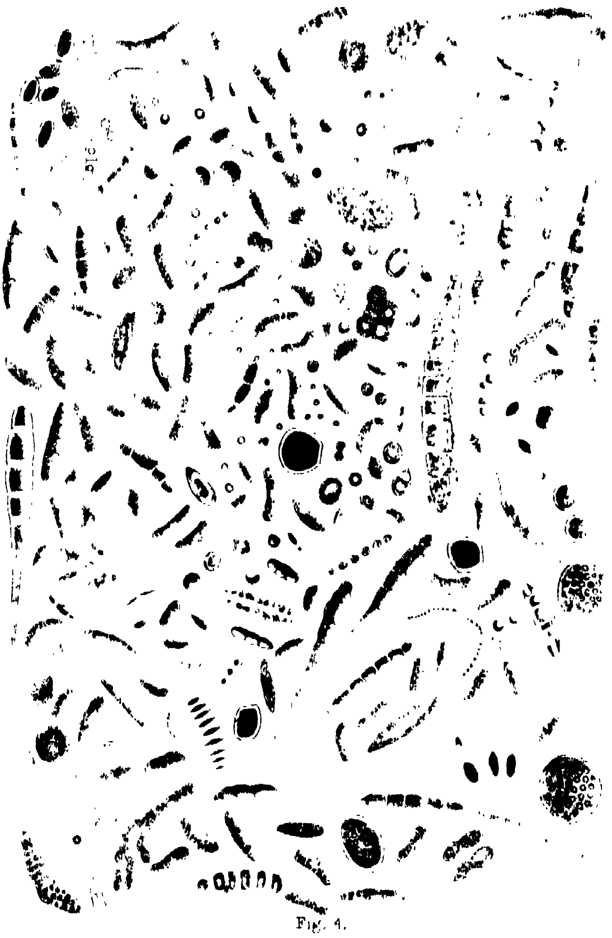


Fig. 4.

June 22.—Temp. 83·8—Wind, E. by S. E. and S. S. E.—Rain, 0·17.

ATMOSPHERIC ORGANISMS, &c. Collected during Periods of Twenty-four Hours in JUNE 1872. Magnified 400 diameters

(PRESIDENCY JAIL.)

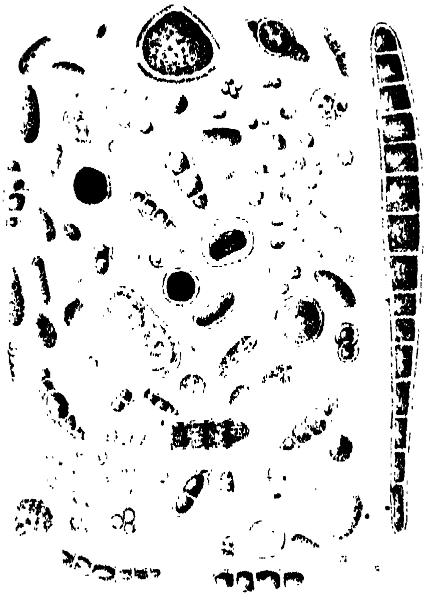
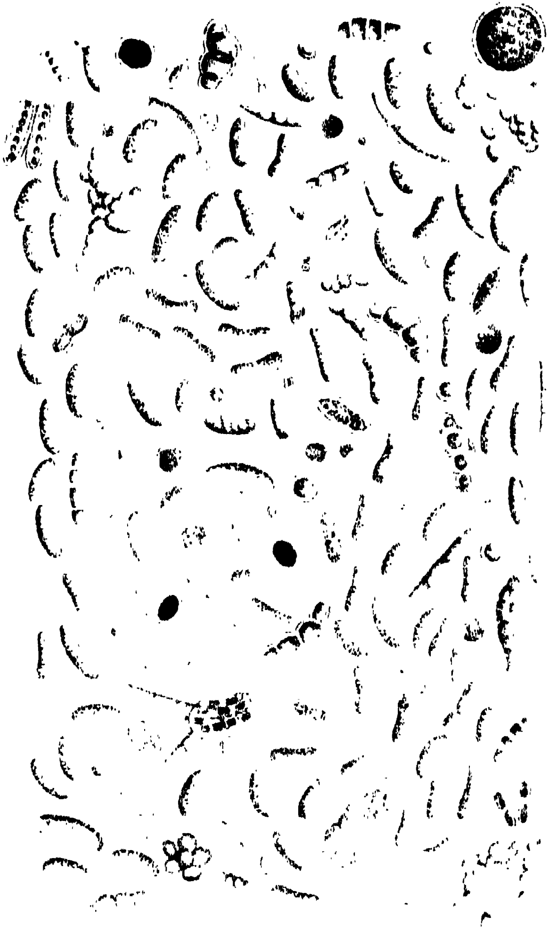


Fig. 1

June [illegible]—Temp. [illegible]—Wind, S and S by W—[illegible]



[illegible]—Temp. [illegible]—Wind, S [illegible] E and S S E [illegible]

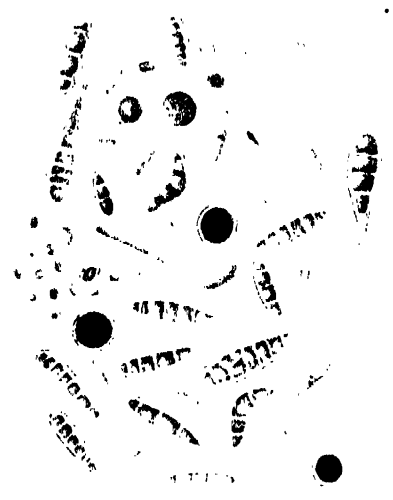


Fig. 3

June [illegible].—Temp. [illegible]—Wind S by E and S S E—Rain [illegible]

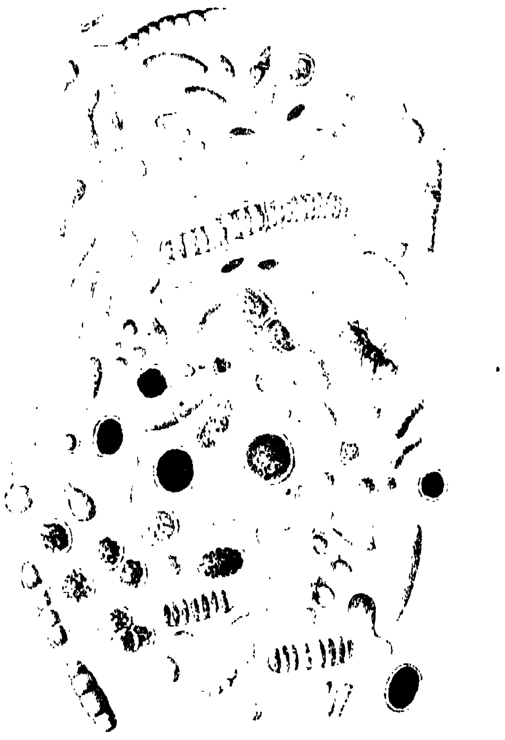


Fig. 4

[illegible]—Temp. [illegible]—Wind E S E and E by N—[illegible]

ATMOSPHERIC ORGANISMS, &c. Collected During Periods of Twenty-four Hours in JUNE, 1872: Magnified 400 diameters.

(ALIPORE.)

PLATE IX.

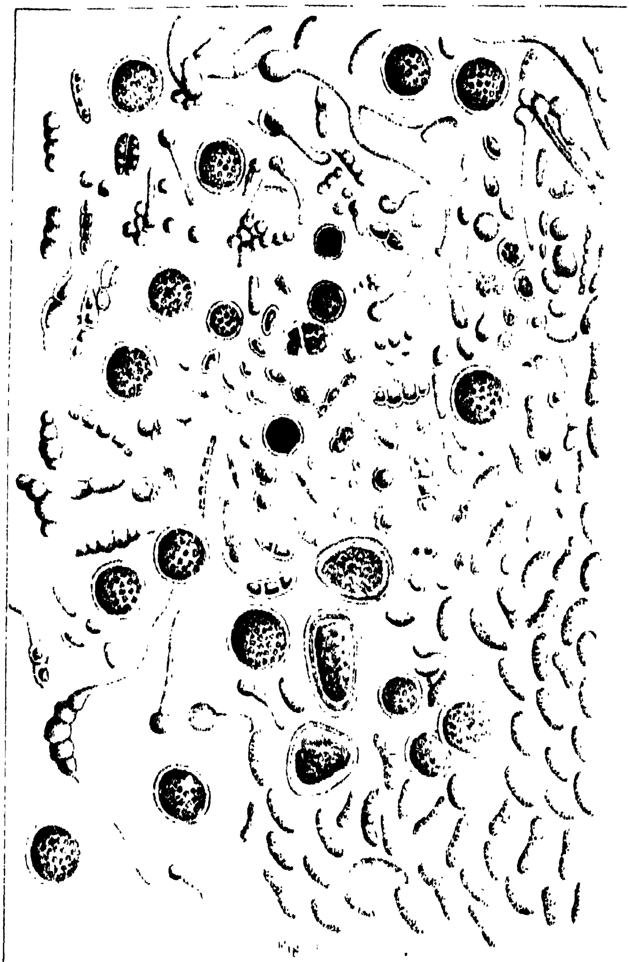
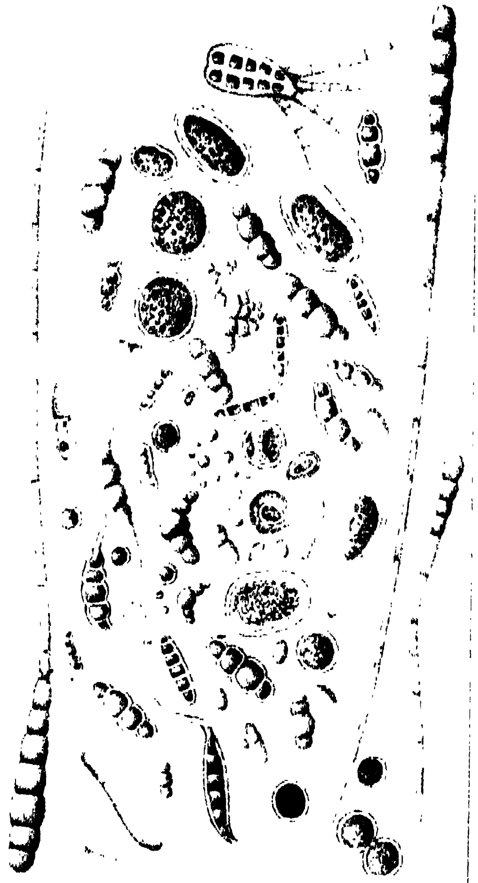


Fig. 1

June 3[illegible]—Temp. [illegible]—Wind E N E and E by N.—Rain 0·25.



July 7.—Temp. [illegible]—Wind S by E and S.—Rain [illegible]

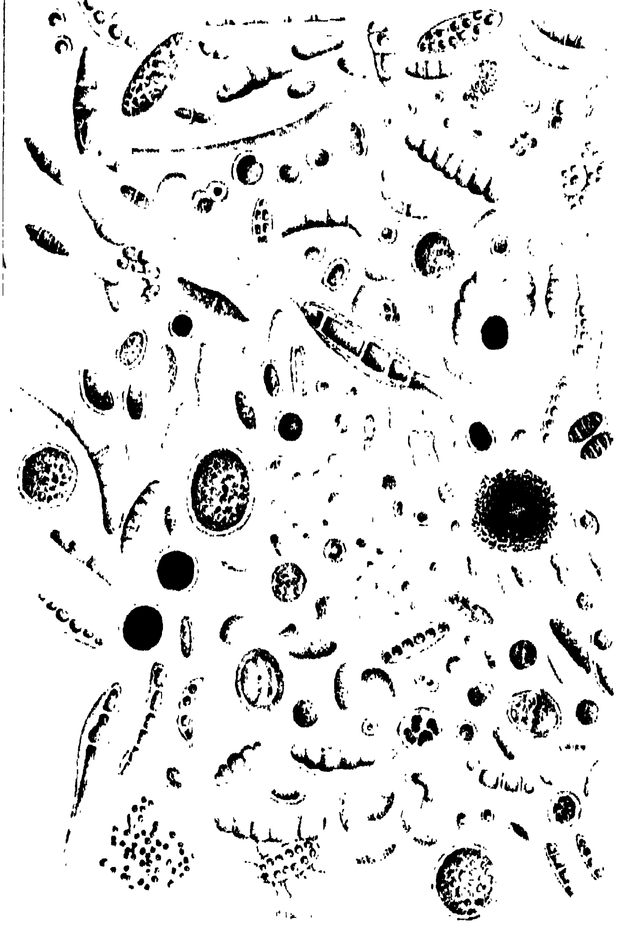


Fig. 3

July 19.—Temp. 80·5.—Wind variable.—Rain [illegible]

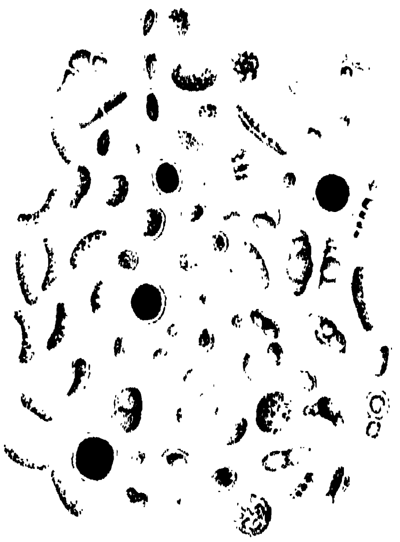
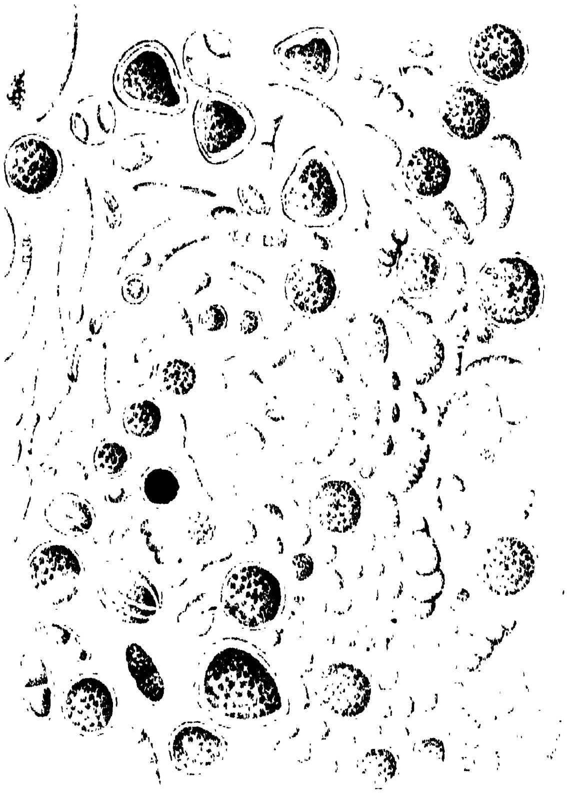


Fig. 4

July [illegible]—Temp. [illegible]—Wind S S.E and S.—Rain 0·0

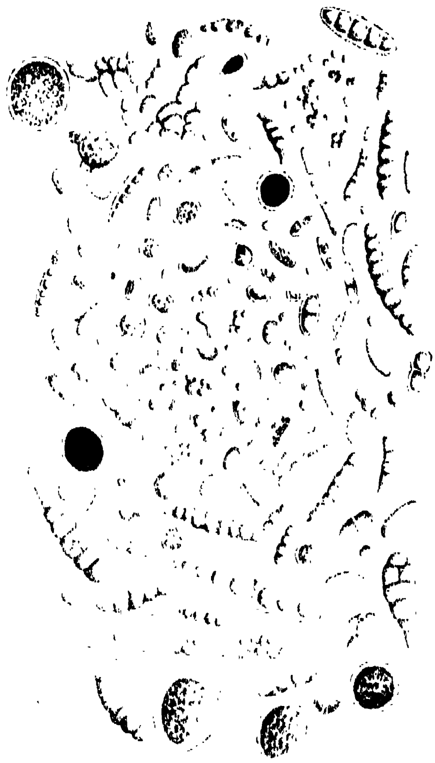
ATMOSPHERIC ORGANISMS, &c. Collected During Periods of Twenty-four Hours in JUNE and JULY, 1872. Magnified [illegible] diameters

PRESIDENCY JAIL.



Fi[illegible]

July 3 —Temp: [illegible]—Wind, S S W [illegible]



F[illegible]

[illegible]—Rain, 0·11"

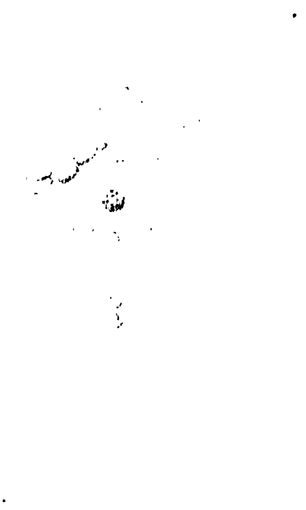


Fig. 3.

July 17 —Temp: 84·2°—Wind S and S by W—Rain [illegible]

Fig. [illegible]

July 2[illegible].—Temp: 82·4°—Wind E and S S E—Rain, [illegible]

ATMOSPHERIC ORGANISMS, &c: Collected During Periods of Twenty-four Hours in JULY, 1872. Magnified 400 diameters.

(ALIPORE.)

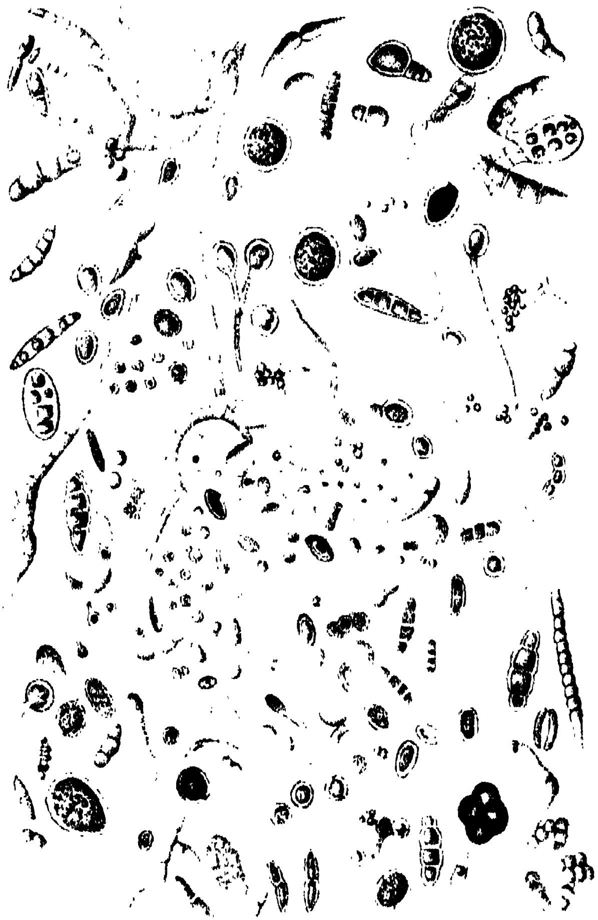


Fig. 1

July 28.—Temp. 82°·1.—Wind, S. S. W.—Rain, 0"·03.

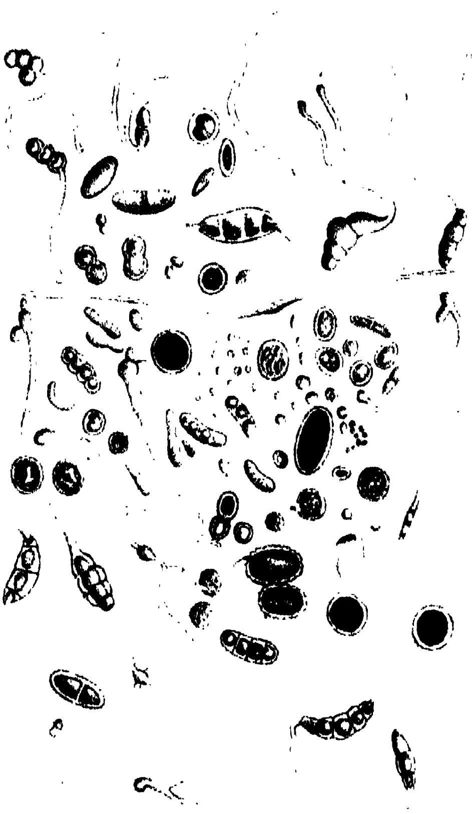


Fig. 2

Aug. 4.—Temp. 84°·9.—Wind, S. by E. and S.—Rain, 0"·41.

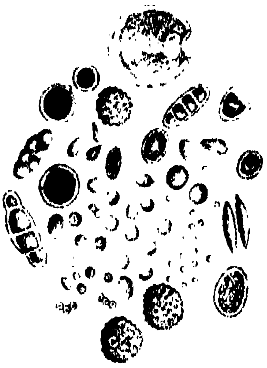


Fig. 3

Aug. 11.—Temp. 83°·6.—Wind, S. by W.—Rain, 0"·03.

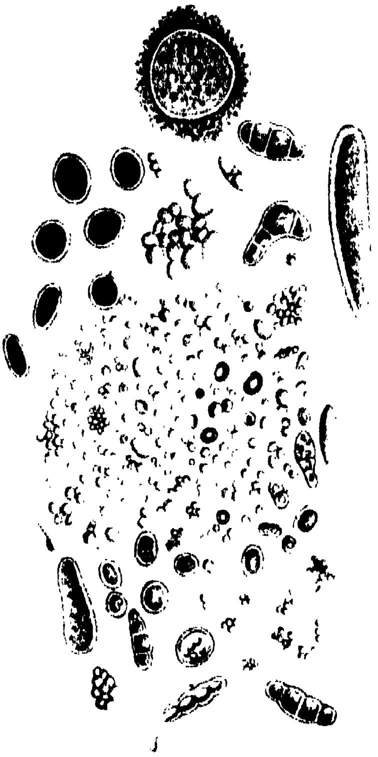


Fig. 4.

Aug. 18.—Temp. 84°·6.—Wind, S. W.—Rain, 0"·0.

ATMOSPHERIC ORGANISMS, &c., Collected During Periods of Twenty-four Hours in JULY and AUGUST, 1872.—Magnified 400 diamete

(PRESIDENCY JAIL.)

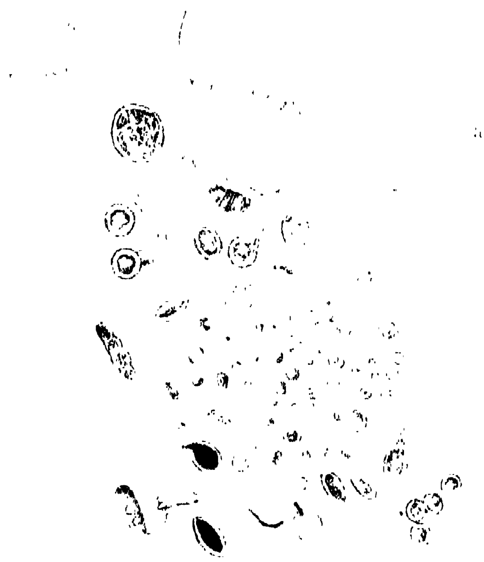


Fig. 1.

July 31.—Temp. [illegible]—Wind, W and S.—Rain, [illegible].

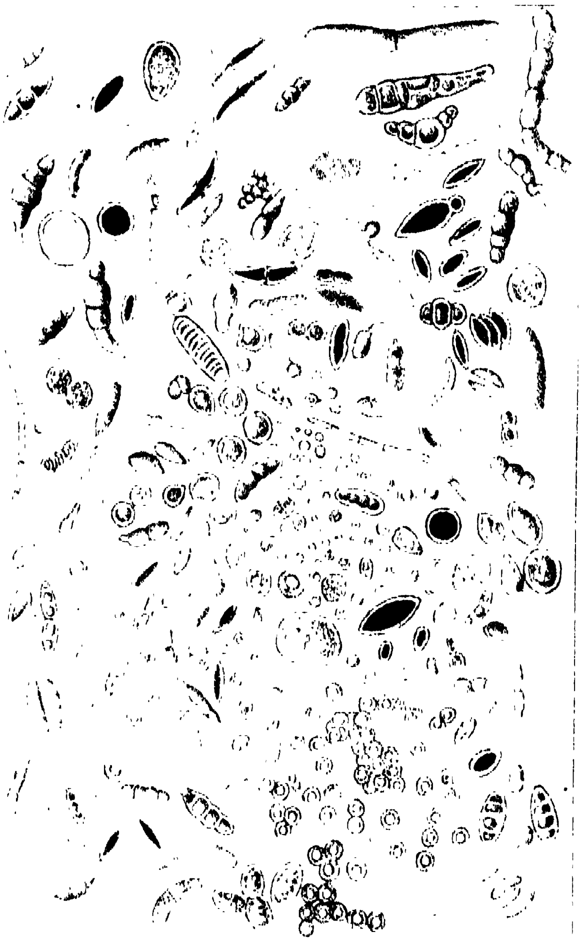


Fig. 2.

Aug. 7.—Temp. [illegible]—Wind, S S E and S.—Rain, [illegible]

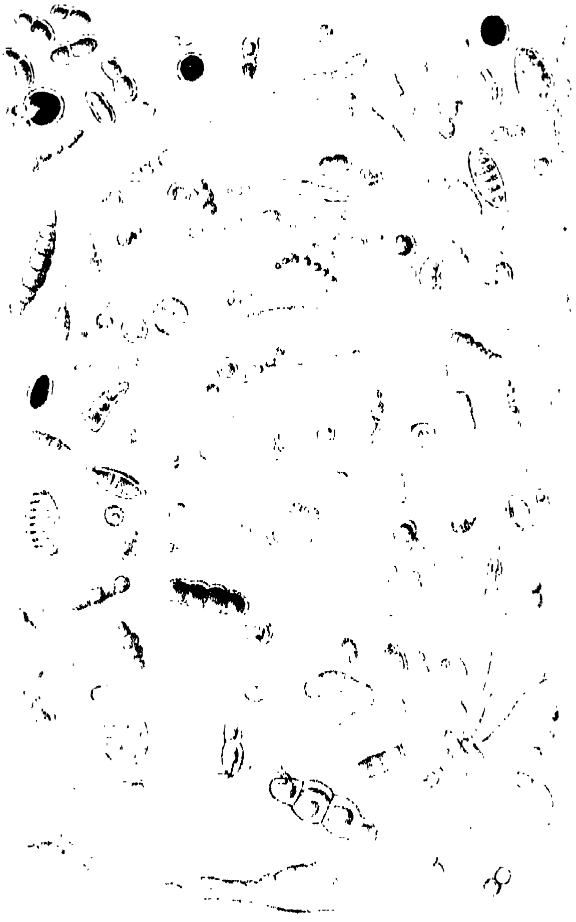


Fig. 3.

Aug. 14.—Temp. 81·3—Wind, S.—Rain, 2·12.

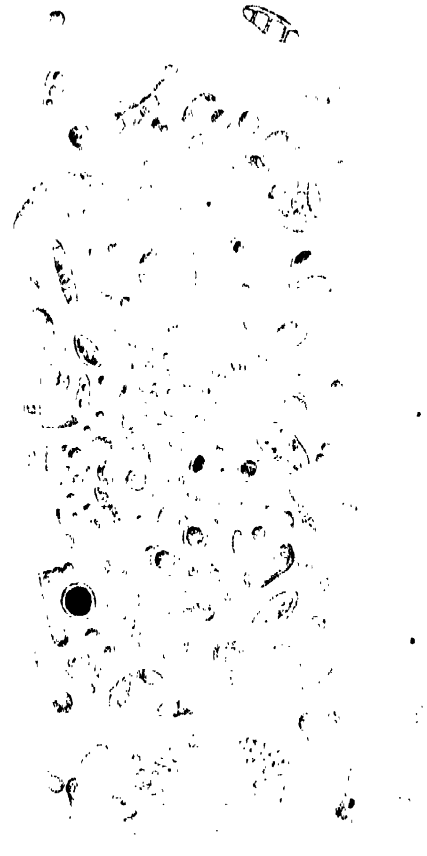


Fig. 4.

Aug. 21.—Temp. 83·4—Wind, W. [illegible] S and S. S W.—Rain, ·13.

ATMOSPHERIC ORGANISMS, &c., Collected During Periods of Twenty-four Hours in JULY and AUGUST, [illegible]. Magnified [illegible] diameters.

(ALIPORE.)

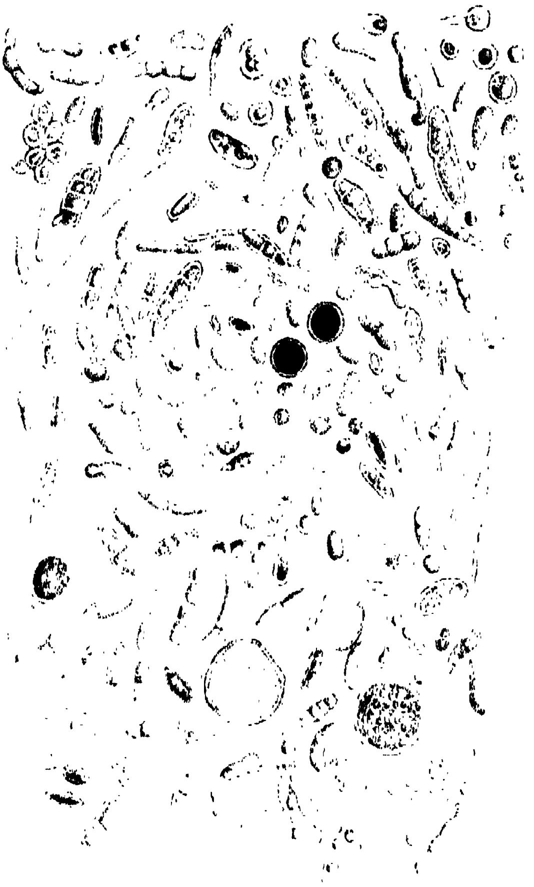


Fig. 1.

Aug. [illegible] —Temp. [illegible] —Wind S. E. —Rain [illegible]

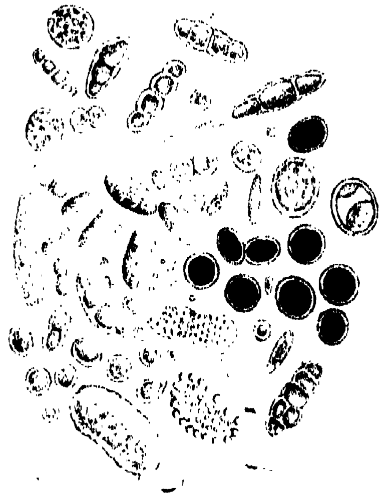


Fig. 2.

Sept. 1.—Temp. [illegible]—Wind S. S. W. Rain 1·05.

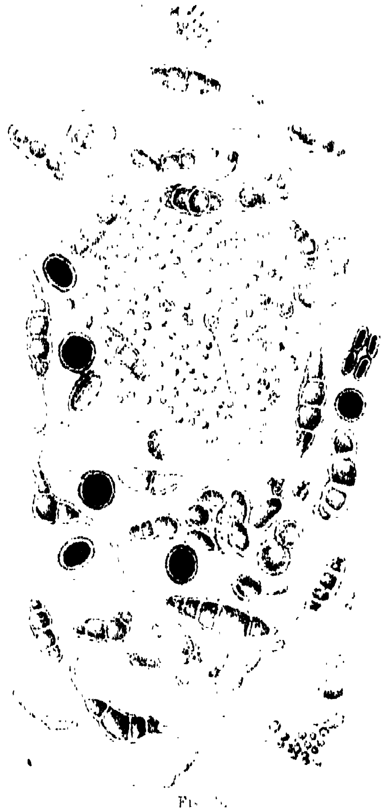


Fig. 3.

[illegible] W. S. W. and W. by S. Rain, [illegible]

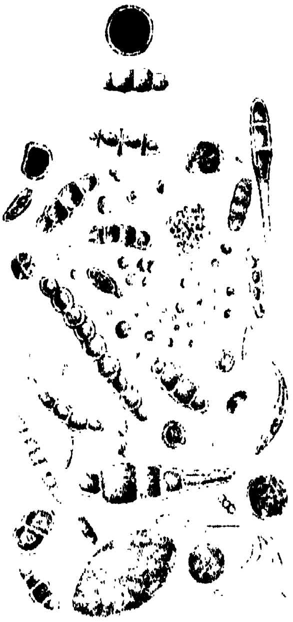


Fig. 4.

Sept. [illegible]—Temp. 81·0.—Wind, S. S. E and E. S. E.—Rain, 0·20

ATMOSPHERIC ORGANISMS [illegible] Periods of Twenty-four Hours in AUG. and SEPT. 1872. Magnified 400 diameters.

PRESIDENCY JAIL.

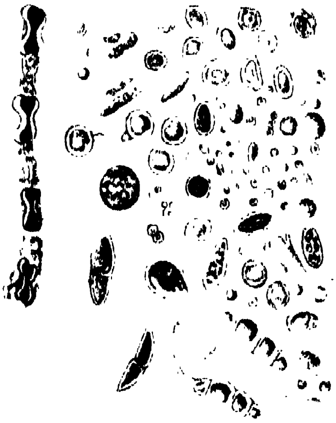


Fig. 1

Aug. [illegible]—Temp. 81·6—Wind, S. and S. E.—Rain, [illegible]

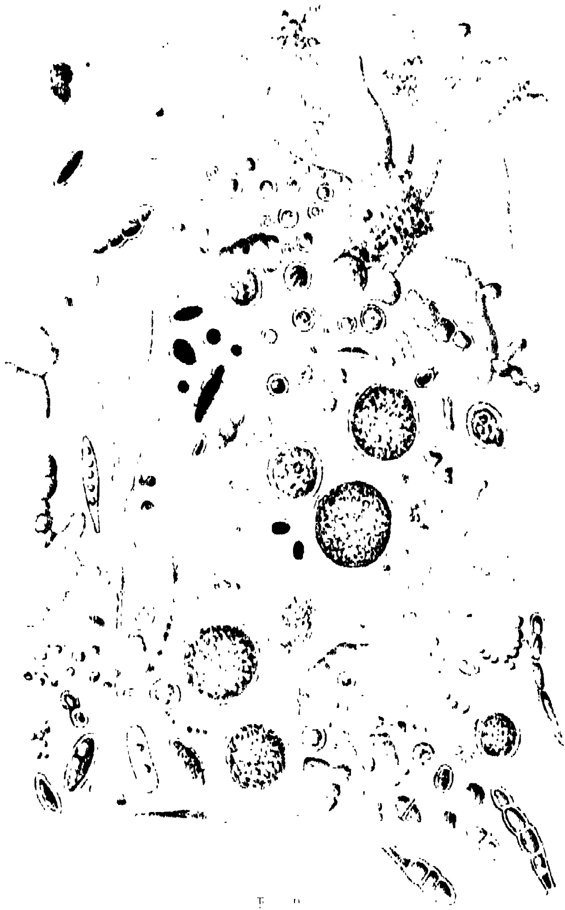


Fig. 2

Sept. [illegible]—Temp. [illegible]—Wind, S. W. and S. S. W.—Rain [illegible]

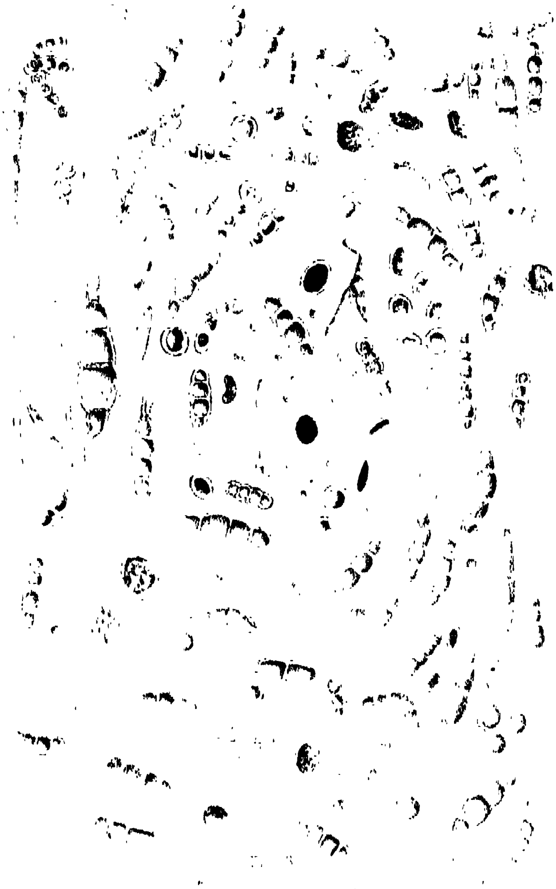


Fig. 3

Sept. 11.—Temp. 87·3.—Wind, N. W. and N. by W.—Rain 0

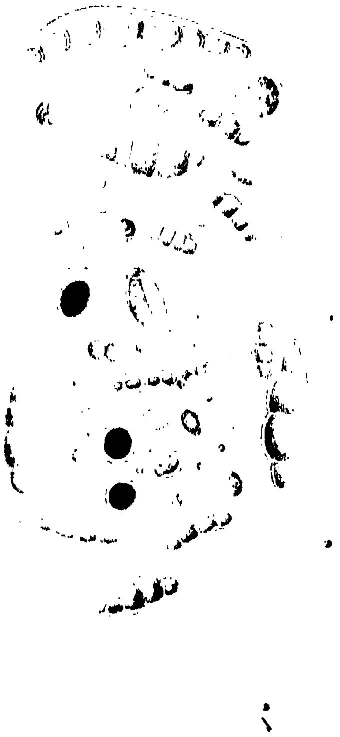


Fig. 4

Sept. 12.—Temp. 85·4.—Wind, S. E.—Rain [illegible]

ATMOSPHERIC ORGANISMS, &c. Collected During Periods of Twenty-four Hours in AUG. and SEPT., 1872: Magnified 400 diam.

(ALIPORE.)

APPENDIX B.

NOTE

ON THE

INFLUENCE OF AGE AND LENGTH OF SERVICE

AS AFFECTING THE

MORTALITY AND INVALIDING OF THE EUROPEAN ARMY IN 1872.

BY

JAMES L. BRYDEN, M.D.,
SURGEON MAJOR, BENGAL ARMY,
STATISTICAL OFFICER ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

CONTENTS.

SECTION I.

LOSS, DURING THE PERIOD OF THEIR INDIAN SERVICE, OF THE REGIMENTS WHICH RETURNED TO ENGLAND IN 1871 AND 1872, AND THE GAIN AND LOSS OF REGIMENTS DURING THE FIRST FIVE YEARS OF RESIDENCE IN INDIA.

PARA.

Loss among the men who landed with the Regiment in 10 Regiments which left India in 1871 and 1872 .. 1

Gain and Loss during the First Five Years in India of 17 Regiments, numbering 13,361, landed in India between 1865 and 1868 2

SECTION II.

DEATHS AND INVALIDING OF 1872 IN RELATION TO AGE AND LENGTH OF SERVICE.

Invaliding of the Army of India in 1872 in relation to Length of Residence 3

Invaliding in the Army of Bengal of men of 5 years' Residence and under, contrasting the Invaliding of men of 24 and under, with that of men of 25 and above 4

Characteristics of the Invaliding of men resident from 1 to 5 years, 6 to 10 years, and above 10 years ... 5

Causes of Invaliding in a body of men in the First Three Years of Indian Service compared with the causes for which men of from One to Three Years' Service were invalided in 1871 and 1872 ... 6

Characteristics of the Invaliding of 1872 when tabulated according to Age 7

Deaths of the Army of Bengal in 1872 in relation to Age, compared with the statistics of 1871 and the standard for the period 1865 to 1870 8

SECTION III.

ENTERIC FEVER IN THE EUROPEAN ARMY OF INDIA IN 1872.

Typhoid of the 89th and 43rd Regiments at Cannanore in Southern India 9

Enteric fever in Bengal in the newly-arrived Regiments of 1872 and 1873 10

Enteric Fever, the one disease peculiar to the young soldier in India 11

Importation of Enteric Fever by Troop Ships 12

Significance of the general development of Enteric Fever in the last week of August 1872 13

Conclusion 15

Enteric Fever among Native Troops 16

Enteric Fever in the Jails of Bengal 17

TABULAR STATEMENTS CONTAINED IN THE NOTE.

PAGE.

Loss per cent. of original strength by Death and Invaliding in Regiments returning from India between 1869 and 1872 lx

Statement showing the loss among the men who landed with their Corps in Regiments which left India for England in 1871 and 1872 lxi

Statement showing the fluctuation in strength of a body of British Soldiers, originally numbering 13,361, during the First Five Years of Residence in India lxiii

Length of Residence of men of the Armies of the Three Presidencies Invalided in 1872 lxiv

Causes of Invaliding in the First Five Years of Indian Service of young soldiers, contrasted with the causes of invaliding of older men who broke down during the same period lxv

Causes of Invaliding at different Periods of Residence in India, contrasted lxv

Invaliding during the First Three Years of Indian Service in 1871 and 1872, compared with the standard of 1865-71 for men at a similar period of residence lxvi

Causes of Invaliding, and Invaliding-rates at the different Ages in the Army of Bengal in 1872 ... lxvii

Deaths of 1872 in relation to Age—

- A. Army of India lxviii
- B. Army of Bengal lxix
- C. Army of Madras lxx
- D. Army of Bombay lxxi

Causes of Death in the Young Soldiers of the Army of India, in relation to the Mortality from Enteric Fever lxxii

APPENDIX B.

NOTE

ON THE

INFLUENCE OF AGE AND LENGTH OF SERVICE

AS AFFECTING THE

MORTALITY AND INVALIDING OF THE EUROPEAN ARMY IN 1872.

SECTION I.

LOSS DURING THE PERIOD OF THEIR INDIAN SERVICE OF THE REGIMENTS WHICH RETURNED TO ENGLAND IN 1871 AND 1872, AND THE GAIN AND LOSS OF REGIMENTS DURING THE FIRST FIVE YEARS OF RESIDENCE IN INDIA.

Loss among the men who landed with the regiment in ten regiments which left India in 1871 and 1872.

The regiments which returned to England on the completion of their Indian Service, in 1871 and 1872, furnished statements showing the loss during the period of residence among the men who originally landed with the corps. The results in ten different bodies are shown in the table which follows. This table is a continuation of that published in my first report, which contained the experience of eight regiments which embarked in 1869 and 1870.

The regiments of 1869 and 1870, viewed as a body, took home with them 12 per cent. of the men who landed in India with their corps. Of the men removed, each hundred was accounted for as under:—Deaths 36, invaliding 32, discharged time-expired or purchased their discharge 31, discharged otherwise 1=100.

The regiments of 1871 and 1872 show 19 per cent. of the original men as returning home; but this is chiefly due to the fact of two regiments of short service, the 2-10th and 2-24th, which served in India for 7 and 8 years only, having upwards of 700 of their original men still left. If these regiments be excluded from the calculation, 13 per cent. is the ratio for the remaining eight bodies.

Each hundred lost, out of the body of 1871-72, shows 28 removed by death and 32 by invaliding, 38 discharged time-expired, and 2 to be otherwise accounted for, as deserters, sentenced to penal servitude, &c.

The percentage of loss coincides very remarkably in the regiments composing these bodies, which served their full time in India. With one exception, the regiments of the Bengal Presidency afford ratios which are almost identical. The figures prove, that, besides the men whose term of service has expired, 50 per cent. will have disappeared by Death or Invaliding before the twelve years of Indian Service are over :—

Loss per cent. of Original Strength by Death and Invaliding in Regiments returning from India from 1869 *to* 1872.

	By Death.	By Invaliding.	
77th Regiment during 12 years' residence in Bengal, lost per cent. of Original Strength	36	19	= 55
14th Brigade, Royal Artillery, 12 years „ „ ...	30	24	= 54
7th Hussars, 12 years „ „ ...	32	17	= 49
3rd Battalion Rifle Brigade, 14 years „ „ ...	28	14	= 42
82nd Regiment, 12 years „ „ ...	27	25	= 52
38th „ 14 „ „ „ ...	27	23	= 50
88th „ 13 „ „ „ ...	27	22	= 49
2nd Dragoon Guards, 12 years „ „ ...	27	19	= 46
93rd Regiment, 12 years „ „ ...	26	22	= 48
1–19th „ 14 „ „ „ ...	26	30	= 56
79th „ 14 „ , „ ...	25	27	= 52
1—7th „ 13 „ „ „ ...	12	25	= 37
3—60th Regiment during 15 years' residence in Madras „ ...	16	23	= 39
95th Regiment during 13 years' residence in Bombay „ ...	15	21	= 36

Statement showing the Loss among the Men who landed with their Corps, in Regiments which left India for England in 1871 *and* 1872, *after the completion of their Indian Service.*

REGIMENT.	Date of arrival in India.	Service in India.		Date of leaving India.	Strength on arrival in India.	Number out of the preceding strength with Regiment at date of embarkation.	Causes of Loss in the different Regiments.									Aggregate of the Loss.	Loss per 1,000 of original strength, excluding transfers.	Loss per 1,000 by Deaths.	Loss per 1,000 by Invaliding.
		Years.	Months.				Died of disease.	Killed or died from wounds.	Invalided on account of wounds.	Invalided for disease.	Discharged time-expired.	Purchased their discharge.	Deserted.	Penal servitude, &c.	Transfers given, &c.				
D. Brigade, Royal Horse Artillery ...	May 1861* ...	11	6	November 1872	596	100	85	8	5	92	189	11	...	...	106	496	654·4	156·0	162·7
20th Hussars	July 1862* ...	10	3	„ 1872	527	158	59	10	...	156	78	10	2	...	54	369	597·7	130·9	296·0
2-10th Regiment	January 1865 ...	8	...	January 1873	906	348	84	2	...	180	143	2	12	8	127	558	475·7	94·9	198·7
1-19th „	November 1857 ...	14	...	November 1871	1,000	97	251	8	...	296	224	9	21	4	90	903	813·0	259·0	296·0
2-24th „	„ 1865† ...	7	1	December 1872	795	376	74	1	...	97	180	2	...	...	65	419	445·3	94·3	122·0
38th „	„ 1857 ...	14	1	„ 1871	1,006	80	249	24	...	284	296	14	...	2	57	926	863·8	271·4	282·3
3-60th „	„ 1857 ...	15	3	November 1872	1,032	73	165	...	...	234	266	31	8	11	244	959	692·8	160·0	226·8
79th „	„ 1857 ...	13	10	October 1871	973	60	227	16	1	262	210	15	2	...	180	913	753·3	249·7	270·3
104th „	February 1862* ...	9	9	November 1871	885	203	133	...	...	191	223	15	6	2	112	682	644·1	150·3	215·8
3rd Battalion, Rifle Brigade ...	November 1857 ...	14	1	December 1871	962	155	256	11	10	122	320	18	...	4	66	807	770·3	277·5	137·2
				TOTAL ...	8,682	1,650	1,583	80	16	1,914	2,129	127	51	31	1,101	7,032	683·1	191·5	222·3

* Date of formation from local regiments.

† From Mauritius.

Gain and loss during the first five years in India, of 17 regiments, numbering 13,361, landed between 1865 and 1868.

2. The question has been asked, what changes may be expected to take place in a body of men during the first five years of residence in India?

I have not the data from which this question can be answered with accuracy as regards the original individuals. But a table is appended to show how, in the experience of the last ten years, a body of British Soldiers, originally numbering 13,361, has fluctuated in strength in the first five years of Indian Service.

At the end of the period, the strength remains virtually the same, as there is a decrease of 153 only. But the restoration of the body to its original strength has necessitated the addition of 4,359 recruits from England, and of 1,920 men of regiments going home who have volunteered for further service in India. For 1,923 soldiers have died, 2,822 have been sent home sick, 1,474 have served out their time or have purchased their discharge, 63 have deserted, and 57 have been dismissed by sentence of Court Martial—a loss of 6,339, replaced, as stated, by 6,279 men, new to the body.

How men new to India break down in the early years of service has been illustrated in the former reports, in which the history of a body of nearly equal strength, 14,750 in its first, second, and third years of service, has been reviewed. The statistics of this body seem to afford a very fair basis of comparison.

In the section which follows, the statistics of 1872, illustrating the effects of age and length of service, will be compared with the standard constructed from the experience of the years from 1858 to 1871.

Fluctuation in Strength of a Body of British Soldiers, originally numbering 13,361, *during the First Five Years of Residence in India.*

	CAUSES OF FLUCTUATION IN STRENGTH.	Royal Horse Artillery, A. Brigade, 1865-69,* 1866-70.	Royal Artillery, 8th Brigade, 1867-71,† 1868-72.	5th Lancers, 1864-68.	30th Regiment, 1864-68.	55th Regiment, 1864-68.	1-11th Regiment, 1865-69.	2-12th Regiment, 1865-69.	58th Regiment, 1866-69.	41st Regiment, 1866-70.	1-3rd Regiment, 1867-71.	1-5th Regiment, 1867-71.	37th Regiment, 1867-71.	4th Hussars, 1868-72.	1-6th Regiment, 1868-72.	2-60th Regiment, 1868-72.	86th Regiment, 1868-72.	92nd Regiment, 1868-72.	Totals for the Body.
	Strength on arrival in India	719	1,021	513	864	1,008	839	874	769	798	710	711	819	*459	794	811	790	862	13,361
CAUSES OF INCREASE.	Transfers from other Regiments and Batteries	226	394	8	6	33	21	23	66	11	4	13	37	14	14	5	10	13	898
	Volunteers from Regiments leaving India ...	7	80	53	48	221	99	117	110	178	80	128	186	67	59	220	131	19	1,803
	Recruited in India — New Soldiers ...	...	5	17	1	5	7	5	2	1	3	2	8	...	1	23	5	...	85
	Recruited in India — Time-expired men ...	...	2	2	...	5	2	14	1	1	...	...	1	...	...	...	1	3	32
	Received from England — Recruits ...	235	254	41	203	98	253	236	308	163	445	441	293	141	355	286	251	356	4,359
	Received from England — Invalids recovered ...	...	...	20	14	...	2	22	...	5	...	...	8	15	7	...	8	5	106
	Deserters rejoined	1	2	3	1	...	...	1	2	4	2	...	4	4	...	1	...	...	25
	Total Increase ...	469	737	144	273	362	384	418	489	363	534	584	537	241	436	535	406	396	7,308
	Aggregate Strength ...	1,188	1,758	657	1.137	1,370	1,223	1,292	1.258	1,161	1,244	1,295	1,356	700	1,230	1,346	1,196	1,258	20.669
CAUSES OF DECREASE.	Transfers given	215	420	9	12	56	67	38	79	34	10	45	23	14	39	25	16	20	1.122
	Time-expired men who have left	84	66	21	164	143	115	124	192	55	35	54	105	25	58	21	35	81	1,378
	Purchased their discharge	8	1	7	9	4	9	3	3	2	6	3	4	5	3	7	10	2	86
	Otherwise discharged	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	6	1	10
	Dismissed by sentence of Court Martial ...	...	7	...	...	...	2	4	1	4	2	6	4	3	7	15	...	2	57
	Deserted	...	3	4	1	4	3	2	9	...	1	...	7	8	1	19	...	1	63
	Loss by Invaliding	199	305	59	198	139	153	223	206	196	128	137	186	129	112	166	144	142	2.822
	Deaths	91	172	67	120	138	122	116	197	89	177	106	73	63	114	85	89	104	1,923
		597	974	168	504	484	471	510	687	381	359	351	403	247	334	338	300	353	7,461

---

* Two batteries of this Brigade arrived in 1865, and three in 1866.

† Three batteries arrived in 1867, and four in 1868.

SECTION II.

DEATHS AND INVALIDING OF 1872 IN RELATION TO AGE AND LENGTH OF SERVICE.

Invaliding of the Army of India in 1872, in relation to length of residence.

In the report of last year, I showed, that out of each 100 men invalided in 1871, 58 had spent five years in India or less; that 24 had served from 6 to 10 years; and 18 only for a longer period.

The ratios for 1872 are very similar, although the proportion of the first class is somewhat smaller:—

Length of Residence of Men Invalided in 1872.

LENGTH OF RESIDENCE.	Bengal.	Madras.	Bombay.	Army of India.	
				1872.	1871.
Five years in India and under ...	50	48	70	53	58
Six to 10 years	31	30	17	29	24
Above 10 years	19	22	13	18	18
TOTAL ...	100	100	100	100	100

The Bombay Presidency having a large proportion of young regiments, shows necessarily a larger number invalided at an early period of residence.

Invaliding in the Army of Bengal of men of five years' residence and under, contrasting the invaliding of men of 24 and under, with that of men of 25 and above.

4. As in former reports, I shall arrange the details of Invaliding in relation to age and length of service, for the Bengal Presidency only, and allow the data for Madras and Bombay to accumulate, in order that these may form an adequate basis of comparison in a future report.

Out of a total of 1,456 invalided from Bengal in 1872*, one-half, 733, had served in India five years or less. Of these, 290 were young men, of 24 and under, and 443 were men of 25 and above that age—

Invalided in first five years of residence.

	First year.	Second year.	Third year.	Fourth year.	Fifth year.	TOTAL.
Twenty-four and under	82	94	56	34	24	290
Twenty-five and above	57	66	76	123	121	443
TOTAL ...	139	160	132	157	145	733

The next statement shows the causes of invaliding in these two classes, and the proportion which the chief causes bear to the total invaliding in either case. In both, heart affections, phthisis, hepatitis, and general debility from climate make up 60 per cent. of the total. In the younger, heart affections and phthisis preponderate; and in the older, hepatitis and debility.

---

* The invaliding of the 107th Regiment was not received in time for incorporation in the tables which follow.

Causes of Invaliding in the First Five Years of Indian Service of Young Soldiers, contrasted with the causes of Invaliding of older men who broke down during the same period.

CAUSES OF INVALIDING.	YEARS OF RESIDENCE IN INDIA, MEN OF 24 YEARS OF AGE AND UNDER.						Invaliding of men of 24 and under.	Invaliding of men from 25 upwards in first five years of Indian service.	PER CENT. OF THE TOTAL INVALIDING OF FIRST FIVE YEARS	
	1st Year.	2nd Year.	3rd Year.	4th Year.	5th Year.	Above 5 Years.			24 and below.	25 and above.
Palpitation	10	13	6	4	3	1	37	29	21	15
Hypertrophy of Heart ...	2	4	1	2	1	...	10 } 63	7 } 65		
Valve disease of Heart ...	3	6	1	3	2	1	16	29		
Phthisis Pulmonalis ...	14	14	9	5	2	1	45	52	15	12
General Debility and Anæmia ...	9	13	8	6	1	...	37	66	13	15
Hepatitis ...	7	10	8	3	4	3	35	78	12	18
Dysentery and Diarrhœa ...	9	5	3	2	3	1	23	27	8	6
Epilepsy	7	3	...	2	1	...	13	6	4	1
Brain Affections	...	6	1	1	1	...	9	12	3	3
Mental Affections	6	...	2	...	...	...	8	14	3	3
Secondary Syphilis ...	3	1	2	2	...	1	9	17	3	4
Spleen Disease	...	2	3	1	1	...	7	6	2	1
Bronchitis and Pneumonia ...	3	1	...	...	...	...	4	13	1	3
Rheumatism	4	1	...	...	...	...	5	24	2	5
All other Diseases	2	14	9	3	5	...	33	53	11	12
Injuries	3	1	3	...	...	...	7	10	2	2
TOTAL ...	82	94	56	34	21	8	298	443	100	100

Characteristics of the invaliding of men resident from 1 to 5 years, 6 to 10 years, and above 10 years.

5. In the statement which follows, the invaliding of these two classes is aggregated, and the invaliding of the men of from 6 to 10 years' residence, and above 10 years, is shown in contrast.

In the three bodies, the same causes come to the top, representing 59, 57, and 60 per cent. of the total invaliding in the three, respectively. Among the old men the effects of climate and hepatitis make up 52 out of 60, and in the middle-class, men resident from 6 to 10 years, 44 out of 57; while in the youngest class, 29 only out of 59 are shown to have been invalided for these causes. But, in the younger class, phthisis and heart diseases compensate for the comparatively small ratio for debility and hepatitis; and while the older bodies show 8 and 13 out of the hundred sent home for these affections, 30 per cent. of the younger class have been invalided on this account:

Invaliding at the different Periods of Residence per cent. of the total invaliding of 1872 *for the Four Chief Causes.*

	1-5 Years.	6-10 Years	Above 10 Years
Phthisis	13	8	5
Heart Affections	17	5	3
Hepatitis	15	17	15
General debility	14	27	37
	59	57	60

How these causes are supplemented to make up the hundred is shown below:

Causes of Invaliding at different Periods of Residence in India, contrasted.

CAUSES OF INVALIDING.	YEARS OF RESIDENCE IN INDIA.			NUMBER INVALIDED AT THE DIFFERENT PERIODS.		
	1 to 5 years.	6 to 10 years.	Above 10 years.	1 to 5 years.	6 to 10 years.	Above 10 years.
Palpitation ...	17	5	3	65	11	2
Hypertrophy of Heart ...				17	4	...
Valve disease of Heart ...				44	10	7
Phthisis Pulmonalis ...	13	8	5	96	35	12
General Debility	14	27	37	103	123	99
Hepatitis	15	17	15	110	79	40
Dysentery	7	5	1	49	21	2
Epilepsy	3	...	...	19	2	...
Brain Affections	3	1	1	21	4	3
Mental Affections	3	2	1	22	11	3
Secondary Syphilis ...	3	6	4	25	26	10
Spleen Disease	2	2	1	13	8	2
Bronchitis	2	5	4	17	25	10
Rheumatism	4	7	14	29	29	38
All other Diseases ...	12	13	12	86	61	34
Injuries	2	2	2	17	8	4
	100	100	100	733	457	266

Causes of invaliding in a body of men on the first three years of Indian service, compared with the causes for which men of from one to three years' service were invalided in 1871 and 1872.

6. The invaliding of the body whose statistics were tabulated in former reports for the first, second, and third years of their Indian service, gives results very nearly parallel with those afforded by the men sent home in 1871 and 1872, after from one to three years' residence in India. Palpitation having in the one case been included under the general head "all other causes", the ratio for heart affections is less by 7 per cent., while the item "all other causes" is increased to a corresponding extent:

Causes of Invaliding in a body of men in the First Three Years of Indian Service, compared with the causes for which men of from one to three years' service were invalided in 1871 *and* 1872.

	Regiments in first three years, 1865-71.	Men of from 1 to 3 years' service, 1871-72.
Heart Affections	10·6*	17·3*
Phthisis	12·9	12·6
General Debility	12·9	14·5
Hepatitis	15·1	14·1
Dysentery	7·2	5·7
Brain Affections	3·7	9·4
Syphilis	5·1	3·6
Rheumatism	7·2	4·4
All other Causes	25·3*	18·4*
TOTAL ...	100·0	100·0

Characteristics of the Invaliding of 1872 when tabulated according to Age.

7. When the invaliding statistics of the year are tabulated according to Age, the same general principles hold good. The main causes of invaliding at the different ages are the same which come forward in relation to length of service, namely, the phthisis and heart affections of the young, and the hepatitis and general debility of the older soldiers.

The ratio of liability to disease which necessitates invaliding at the different ages, is wonderfully consistent when reviewed through a series of years:

Ratio of Liability to Invaliding at the different Ages shown in percentages.

	24 and under.	25 to 29.	30 and upwards.	Total.
Standard of 1865-70	18·36	27·48	54·16	100
1871	19·30	30·05	50·65	100
1872	18·00	31·70	50·30	100

Deaths of the Army of Bengal in 1872 in relation to Age, compared with the statistics of 1871, and the standard for the period 1865-70.

8. The Deaths of the Army arranged in relation to Age show the same consistent history, when cholera, the chief disturbing cause, is excluded from the calculation:

Ratio of Liability to Death at the different Ages shown in percentages.

	ARMY OF INDIA, 1871 AND 1872 (EXCLUDING CHOLERA).				
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Total.
1872	9·87	21·08	24·57	44·48	100
1871	11·61	18·88	22·74	46·77	100
	ARMY OF BENGAL (EXCLUDING CHOLERA).				
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Total.
Standard of 1865-70	11·09	19·92	25·37	43·62	100
1871	13·84	18·25	22·99	44·92	100
1872	8·79	20·02	26·22	44·97	100

The details from which these totals are made up are also very consistent; and the tables which follow illustrate for 1872 what has been tabulated in former reports for the period from 1865 onwards. The first, illustrating the Invaliding of 1872 in relation to Age, has reference to the Bengal Army only; and the four succeeding, showing the Deaths of 1872 in relation to Age, furnish, in a parallel form, the facts for the Army of each Presidency and for the Army of India regarded as a body.

---

* See remarks above.

Distribution according to Age of the Strength of the Army of the Bengal Presidency at the beginning of 1872.

TOTAL STRENGTH.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
					12,847	
36,349	2,220	11,453	9,829	8,500	3,696	651

Invaliding of 1872, and the Invaliding-rates at the different Ages.

CAUSES OF INVALIDING.	NUMBER INVALIDED AT THE DIFFERENT AGES.				INVALIDING-RATE PER 1,000 OF THE STRENGTHS ABOVE STATED.			RATIO OF LIABILITY IN PERCENTAGES.			
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	24 and under.	25 to 29.	30 and upwards.	24 and under.	25 to 29.	30 and upwards.	TOTAL.
Palpitation	...	37	27	13	4·61	5·50	3·35	34·25	40·86	24·89	100
Hypertrophy of Heart	1	9	8	4							
Valve Disease of Heart	...	16	19	26							
Phthisis Pulmonalis	1	44	52	46	3·29	5·29	3·58	27·06	43·50	29·44	100
General Debility	3	34	52	236	2·70	5·29	18·37	10·24	20·07	69·69	100
Hepatitis	...	35	59	134	2·56	6·00	10·43	13·48	31·60	54·92	100
Dysentery and Diarrhœa	...	23	25	24	1·68	2·54	1·87	27·59	41·71	30·70	100
Epilepsy and Brain Affections*	...	22	12	16	1·61	1·22	1·25	39·46	29·90	30·64	100
Mental Affections	...	8	12	16	·59	1·22	1·25	19·28	39·87	40·85	100
Secondary Syphilis	...	9	17	35	·66	1·73	2·72	12·91	33·86	53·23	100
Spleen Disease	1	6	9	7	·51	·92	·54	25·89	46·70	27·41	100
Bronchitis and Asthma	...	4	12	36	·29	1·22	2·80	6·73	28·31	64·96	100
Rheumatism	...	5	21	70	·37	2·14	5·45	4·65	26·89	68·46	100
All other Causes	4	36	52	119	2·92	5·29	9·26	16·71	30·28	53·01	100
ALL CAUSES	10	288	377	782	21·79	38·36	60·87	18·00	31·70	50·30	100
TOTALS OF 1871	36	317	407	793	25·97	40·42	68·14	19·30	30·05	50·65	100
STANDARD OF 1865-70	...	...	...	...	26·55	39·74	78·34	18·36	27·48	54·16	100

---

* Epilepsy :—under 24, 13; 25 to 29, 6; 30 and upwards, 2.

Distribution according to Age of the Strength of the Army of India at the beginning of 1872.

TOTAL STRENGTH.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
				20,305		
58,777	4,042	18,976	15,454	13,250	5,934	1,121

Deaths of 1872, and the Death-rates at the different Ages.

CAUSES OF DEATHS.	NUMBER OF DEATHS AT THE DIFFERENT AGES.				DIED PER 1,000 OF THE STRENGTH ABOVE STATED.				RATIO OF LIABILITY IN PERCENTAGES.				TOTAL.
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	
Cholera	4	134	113	177	·99	7·06	7·31	8·72	4·11	29·32	30·36	36·21	100
Remittent and Continued Fevers	2	27	17	33	·49	1·42	1·10	1·63	10·56	30·60	23·71	35·13	100
Enteric Fever	10	60	29	13	2·48	3·16	1·88	·64	30·39	38·73	23·04	7·84	100
Apoplexy	1	19	22	71	·25	1·00	1·42	3·49	4·06	16·23	23·05	56·66	100
Delirium Tremens	...	...	2	9	...	...	·13	·44	...	...	22·81	77·19	100
Dysentery and Diarrhœa	...	23	33	61	...	1·21	2·13	3·00	...	19·09	33·59	47·32	100
Hepatitis	2	24	38	81	·49	1·26	2·46	3·99	5·97	15·37	30·00	48·66	100
Phthisis Pulmonalis	3	15	14	43	·74	·79	·91	2·12	16·23	17·32	19·96	46·49	100
Heart Disease	...	4	4	66	...	·21	·26	3·25	...	5·65	6·98	87·37	100
All other causes	5	59	60	144	1·24	3·11	3·88	7·09	8·09	20·30	25·33	46·28	100
ALL CAUSES	27	365	332	698	6·68	19·22	21·48	34·37	8·17	23·51	26·28	42·04	100
ALL CAUSES, EXCLUDING CHOLERA ...	23	231	219	521	5·69	12·16	14·17	25·65	9·87	21·08	24·57	44·48	100
RATIOS OF 1871, EXCLUDING CHOLERA ...	...	...	...	...	6·62	10·77	12·97	26·68	11·61	18·88	22·74	46·77	100

Distribution according to Age of the Strength of the Army of Bengal at the beginning of 1872.

Total Strength.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
				12,847		
36,349	2,220	11,453	9,829	8,500	3,696	651

Deaths of 1872, *and the Death-rates at the different Ages.*

Causes of Deaths.	Number of Deaths at the different Ages.				Died per 1,000 of the Strength above stated.				Ratio of Liability in percentages.				Total.
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	
Cholera	4	114	106	166	1·80	9·96	10·79	12·92	5·08	28·08	30·42	36·42	100
Remittent and Continued Fevers	1	19	13	30	·45	1·66	1·32	2·33	7·81	28·82	22·92	40·45	100
Enteric Fever	4	30	18	8	1·80	2·62	1·83	·62	26·20	38·14	26·64	9·02	100
Apoplexy	1	12	10	34	·45	1·05	1·02	2·65	8·70	20·31	19·73	51·26	100
Delirium Tremens	...	...	1	4	...	...	·10	·31	...	...	24·39	75·61	100
Dysentery and Diarrhœa	...	13	21	38	...	1·13	2·14	2·96	...	18·14	34·35	47·51	100
Hepatitis	1	12	28	46	·45	1·05	2·85	3·58	5·68	13·24	35·94	45·14	100
Phthisis Pulmonalis	2	5	8	23	·90	·44	·81	1·79	22·84	11·17	20·56	45·43	100
Heart Disease	...	3	3	34	...	·26	·31	2·65	...	8·08	9·63	82·29	100
All other causes	2	35	43	108	·90	3·05	4·37	8·41	5·38	18·23	26·12	50·27	100
All Causes	15	243	251	491	6·75	21·22	25·54	38·22	7·36	23·13	27·84	41·67	100
All Causes, excluding Cholera ...	11	129	145	325	4·95	11·26	14·75	25·30	8·79	20·02	26·22	44·97	100
Ratios of 1871 (excluding Cholera) ...	...	...	...	...	8·31	10·96	13·81	26·98	13·84	18·25	22·99	44·92	100
Standard of 1865-70 ,, ...	...	...	...	...	7·61	13·67	17·41	29·94	11·09	19·92	25·37	43·62	100

Distribution according to Age of the Strength of the Army of Madras at the beginning of 1872.

Total Strength.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
					4,226	
11,486	820	3,440	3,000	2,800	1,180	246

Deaths of 1872, *and the Death-rates at the different Ages.*

Causes of Deaths.	Number of Deaths at the different Ages.				Died per 1,000 of the strength above stated.				Ratio of Liability in percentages.				Total.
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	
Cholera	...	1	...	1	...	·30	...	.23	...	56·60	...	43·40	100
Remittent and Continued Fevers	1	5	1	1	1·22	1·45	·33	.23	37·77	44·89	10·22	7·12	100
Enteric Fever	3	17	6	1	3·66	4·94	2·00	.23	33·80	45·61	18·47	2·12	100
Apoplexy	...	5	5	18	...	1·45	1·67	4·26	...	19·65	22·63	57·72	100
Delirium Tremens	...	...	1	3	...	...	·33	·71	...	...	31·73	68·27	100
Dysentery and Diarrhœa	...	5	8	19	...	1·45	2·67	4·50	...	16·82	30·98	52·20	100
Hepatitis	1	8	6	23	1·22	2·33	2·00	5·45	11·10	21·18	18·18	49·54	100
Phthisis Pulmonalis	1	4	3	11	1·22	1·16	1·00	2·60	20·40	19·40	16·72	43·48	100
Heart Disease	...	1	1	22	...	·30	·33	5·21	...	5·14	5·65	89·21	100
All other causes	2	9	7	19	2·44	2·62	2·34	4·50	20·50	22·02	19·66	37·82	100
All causes	8	55	38	118	9·76	16·00	12·67	27·92	14·71	24·11	19·10	42·08	100
All causes, excluding Cholera ...	8	54	38	117	9·76	15·70	12·67	27·69	14·83	23·85	19·25	42·07	100
Ratios of 1871, excluding Cholera ...	...	...	...	...	3·57	11·48	11·44	28·13	6·54	21·02	20·94	51·50	100

Distribution according to Age of the Strength of the Army of Bombay at the beginning of 1872.

TOTAL STRENGTH.	Under 20.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 and upwards.
					3,232	
10,942	1,002	4,083	2,625	1,950	1,058	224

Deaths of 1872, *and the Death-rates at the different Ages.*

CAUSES OF DEATHS.	NUMBER OF DEATHS AT THE DIFFERENT AGES.				DIED PER 1,000 OF THE STRENGTH ABOVE STATED.				RATIO OF LIABILITY IN PERCENTAGES.				TOTAL.
	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	Under 20.	20 to 24.	25 to 29.	30 and upwards.	
Cholera	...	19	7	10	...	4·65	2·67	3·09	...	44·67	25·65	29·68	100
Remittent and Continued Fevers	...	3	3	2	...	·73	1·14	·62	...	29·32	45·78	24·90	100
Enteric Fever	3	13	5	4	3·00	3·18	1·90	1·24	32·19	34·12	20·39	13·30	100
Apoplexy	...	2	7	19	...	·49	2·67	5·88	...	5·42	29·54	65·04	100
Delirium Tremens	...	...	...	2	...	...	...	·62	...	...	...	100·00	100
Dysentery and Diarrhœa	...	5	4	4	...	1·23	1·53	1·24	...	30·75	38·25	31·00	100
Hepatitis	...	4	4	12	...	·98	1·53	3·72	...	15·73	24·56	59·71	100
Phthisis Pulmonalis	...	6	3	9	...	1·47	1·14	2·78	...	27·27	21·15	51·58	100
Heart Disease	...	...	...	10	...	...	...	3·09	...	...	...	100·00	100
All other causes	1	15	10	17	1·00	3·68	3·80	5·26	7·27	26·78	27·66	38·29	100
ALL CAUSES	4	67	43	89	4·00	16·41	16·38	27·54	6·22	25·51	25·46	42·81	100
ALL CAUSES, EXCLUDING CHOLERA ...	4	48	36	79	4·00	11·76	13·71	24·45	7·42	21·81	25·43	45·34	100
RATIOS OF 1871, EXCLUDING CHOLERA ...	...	...	...	...	5·47	9·67	11·44	23·76	10·87	19·21	22·73	47·19	100

SECTION III.

ENTERIC FEVER IN THE EUROPEAN ARMY OF INDIA IN 1872.

Typhoid of the 89th and 43rd Regiments at Cannanore in Southern India.

9. In Southern India, at Cannanore, Her Majesty's 43rd Regiment, immediately on landing, repeated the typhoid history of the 89th. The facts of December 1872 and January 1873 were perfectly parallel with those of December 1870 and January 1871. And the cause was the same. The climate of Cannanore is not adapted to the constitution of a young regiment new to India; and the fact that the 89th had in its first year, besides the outbreak of typhoid, 176 cases of dysentery, shows that it is very undesirable to place in Cannanore a regiment direct from England.*

The theory that the 89th brought their typhoid with them, is of no value in the face of the facts bearing on the natural history of typhoid furnished by the experience of the Army distributed throughout India; and the remedy is to be sought, not only in altering the local arrangements at Cannanore, but also in ceasing to afford to the locality a material susceptible to its special influences. Up to 25th April, the date of the latest return beside me, the 43rd Regiment had 37 cases of enteric fever, and seven deaths from the same cause.

Enteric fever in Bengal in the newly arrived regiments of 1872 and 1873.

10. My report of last year for Bengal, dealt with the enteric fever of the newly-arrived regiments of 1871, stationed at Hazareebaugh, Agra, and Umballa; the 63rd, 65th, and 72nd. I took occasion then to notice, that the new regiments of 1872 (the 54th stationed at Jullundur, and the 70th stationed at Rawul Pindee), had, as usual, developed enteric fever. The 54th returns 7 cases and 5 deaths, and the 70th 8 cases and 4 deaths in 1872. Of the seven batteries of the 13th Brigade, Royal Artillery, which arrived in 1872, distributed from Fort William to Attock, five showed cases of enteric fever during the first year.

Our new regiments of 1873 have been less fortunate than the 54th and 70th.

The 40th, stationed at Lucknow, threatens to report the history of the 36th in 1864. On 23rd May of the current year, Surgeon Major Fraser writes—"Two deaths have occurred from enteric fever. during the week. Both had the usual ulceration of the intestinal glands and Peyer's patches. Sixteen cases of this disease have come under treatment since our arrival at Lucknow, and six have died. The cases treated in the cold weather recovered, the fatal cases have occurred since the setting in of the hot weather. The average age of the men attacked is 22 years and five months. The disease is not confined to any particular portion of the lines or to any particular building, nor does it appear to arise from any discoverable local cause."

In the latest return to hand, for the week ending 27th June, a fatal case is recorded in a lad of 21.

The 51st, stationed at Fyzabad, has been equally unfortunate. Up to the end of June, seven men had died from enteric fever, one aged 19, five aged 21, and one aged 26. One man died in January. There was a clear break for the next two months and a half, for no case occurred between the 1st February and 18th April.

In the return for the week ending 11th April, Surgeon Kidd remarks—"An increase in the number of admissions has occurred during the week, attributable to the increased prevalence of cases of febricula, attended in many

---

* In his Report for 1871, the Sanitary Commissioner for Madras calls attention to the fact, that this fever of Her Majesty's 89th occurred in "the cold season of the year," as discrediting the opinion that climatic causes could have produced this outbreak of Enteric Fever. The Report of the Army Sanitary Commission gives the following as the mean temperature of Cannanore for the nine years from 1850 to 1858:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
82	81·75	84	86	85	80	79	79	79	80·50	81·75	81

From this it appears that the temperature of December at Cannanore is less than the maximum of the year by five degrees only.

instances by inflammation of the tonsils. None of the cases have been of a serious character." This was the commencement of the renewed outbreak of enteric fever, with the setting in of the hot season. In the return of 18th April we read—"As during the preceding week, fever is the prevailing disease. In the great majority of cases the attacks are of a transient character. But in two instances the enteric type has become developed, and the patients are seriously ill." In the next week two more cases were admitted, and two proved fatal; and it is remarked that the characteristic lesions were well marked in each. And so the history runs on.

The Batteries of the C. Brigade, Royal Horse Artillery, which arrived from England in the beginning of 1873, stationed at Meerut and Mhow, have suffered very severely from enteric fever. In the Meerut Battery the first casualty occurred on 18th April. On 18th July, in commenting on a second fatal case, the medical officer remarks: "Typhoid is still lurking about. I believe there is nothing wrong with the water, and the wells have got a good name. The climate has severely tried all our boys. Every case admitted at first presents grave symptoms, whilst seasoned batteries are perfectly healthy."

On 12th September, in noticing a third casualty, he writes: "Enteric fever, which I hoped had died out, is again at work. I am most anxious about several cases, now being watched; because it would appear that with such the simplest case of diarrhœa is apt to turn to typhoid." On 24th September another young man died, and the medical officer writes: "I have recommended that the battery may be sent out into camp, and this will, I think, be done at once, and not too soon."

When my report of last year was written, these regiments were in England. In asserting the principle that the typhoid of India is due to general causes, and not to local causes, unless as secondary, I had before me the constantly repeated experience of the ten previous years; and it is satisfactory to me to find that the anticipated facts come up year by year in confirmation of the truth of my generalisation.

Eight years since, from the facts then at my disposal, I made the generalisation, that the typhoid of the British soldier in India is primarily due to climatic influences. The belief that defective conservancy will be found in every case when typhoid fever shows itself, is very apt to lead on to the conclusion that any statement to the contrary must be erroneous. This is a narrow view, and it is not warranted by any feature in the aspect of typhoid as we meet with it among our soldiers. Murchison justly observes, that we must study anew the etiology of enteric fevers in the light thrown on the subject by the ascertained history of typhoid in the British Army in India.*

Enteric Fever, the one disease peculiar to the young soldier in India.

11. Last year I brought prominently to notice, that enteric fever was the one disease peculiar to the young soldier. I place the parallel fact for 1872 beside the figures given last year for 1871. I have taken the deaths of 1872 in young soldiers up to 24, thus including the first and second divisions given in the annual return, namely, below 20, and 20 to 24.

Causes of Death in Young Soldiers of the Army of India (excluding Cholera).

1871. (Up to 23). Total 175.		1872. (Up to 24). Total 224.	
Enteric Fever	62	Enteric Fever	70
Other Fevers	30	Other Fevers	25
Hepatitis	12	Hepatitis	26
Dysentery	17	Dysentery	24
Phthisis	9	Phthisis and other Tubercular affections	21
Heat Apoplexy	7	Pneumonia (? Tuberculosis)	14
Heart Disease	1	Heat Apoplexy	21
All other causes	37	Heart disease	4
		All other causes	19

---

* The London Medical Record No 11 for March 19th, 1873.

Ages of the men who died from Enteric Fever in 1872.

Aged	... 15	Died ...	... 1	70
"	... 19	" ...	... 9	
"	... 20	" ...	... 12	
"	... 21	" ...	... 14	
"	... 22	" ...	... 7	
"	... 23	" ...	... 16	
"	... 24	" ...	... 11	
"	... 25—29	...	...	29
"	... 30 and upwards	...	...	13

The deaths of the Army from enteric fever amounted to 112, and were from 53 different Corps. The geographical distribution was universal, from Nusseerabad and Kurrachee in the west, to Burmah in the east; and from Cannanore in the south, to Peshawur and Cherat in the north. In the extracts which follow, the details regarding the occurrence of enteric fever in 52 of our military stations in 1872 will be found.*

Importation of Enteric Fever by Troop-ships.

12. In the face of such facts, the question whether enteric fever may be propagated after importation by troop-ships, becomes of secondary importance. The fact that enteric fever may occur among young soldiers during the voyage out does not necessarily imply that typhoid was taken on board at the port of embarkation; and all statements regarding the importation of typhoid should be reviewed with due regard to the fact, that the sudden change to a tropical climate predisposes to the spontaneous development of typhoid in young and weakly-constitutioned lads. Four cases of enteric fever were landed from Overland troop-ships, and treated in the Colaba Depôt at Bombay, one in March and three in November; and it is quite possible that some of the cases which I have noticed as apt to occur in recruits on the journey up-country, may have their origin on board-ship.

Significance of the general development of Enteric Fever in the last week of August 1872.

13. A phenomenon which at first sight appears very extraordinary, shows itself in the statistics of enteric fever in 1872. In the last ten days of August, almost every station over several enormous areas began to return cases of enteric fever: Secunderabad and Poona in the Deccan, Nusseerabad, Neemuch and Mhow in the north of the Bombay Presidency, Kurrachee and Hyderabad in Scinde, and Meerut, Muttra, Jullundur and Umballa in Northern India all returned in the same week, and after an interval of months during which no typhoid had appeared, fatal cases of enteric fever.

Fatal cases of Enteric Fever developed on the last week of August 1872.

Nusseerabad,
59th Regiment.
* * *
August 29th ... 1
September 9th ... 1
" 16th ... 1
" 25th ... 1

Neemuch,
D. Battery, 18th Brigade.
* * *
September 4th ... 1

Mhow,
49th Regiment.
* * *
September 18th ... 1†

Kurrachee,
C. Battery, 9th Brigade.
* * *
September 12th ... 1

Kurrachee,
66th Regiment.
May 15th ... 1
* * *
August 27th ... 1
September 16th ... 1

Hyderabad, Scinde,
Detachment 66th.
* * *
September 7th ... 1
" 28th ... 1

Poona,
56th Regiment.
January 24th ... 1
* * *
September 1st ... 1

Poona,
83rd Regiment.
* * *
August 25th ... 1

Secunderabad,
2-24th Regiment.
May 31st ... 1
* * *
August 21st ... 1
" 31st ... 1
September 11th ... 1
" 18th ... 1

---

* These extracts were prepared for publication. But as they repeat, in every detail, the local history of Typhoid as given in the Report of 1871, it has been thought unnecessary to add to the length of this Note by reproducing them.

† Was ill for 22 days. The case was returned as Remittent Fever. "Peyer's patches were elevated and distended, and the ileocæcal valve was nearly destroyed."

Fatal cases of Enteric Fever developed on the last week of August 1872,—contd.

Secunderabad,
5th Battery, 5th Brigade.

* * *

August	26th ...	1
September	8th ...	1

Secunderabad,
76th Regiment.

* * *

September	6th ...	1
„	28th ...	2

Meerut,
E. Battery, F. Brigade.

* * *

September	6th ...	1
„	19th ...	1

Muttra,
11th Hussars.

* * *

August	29th ..	1
October	13th ...	1

Umballa,
72nd Regiment.

* * *

August	29th ...	1
September	7th ...	1
„	29th ...	1

Jullundur.

May	10th ...	1

* * *

August	24th ...	1
September	12th ...	1
„	15th ...	1
„	16th ...	1

It is of very great importance that the interpretation of this phenomenon should be accurately made. To me it appears an admirable demonstration of the truth, that the typhoid of India, which I have described, is not primarily attributable to special and locally existing conditions.

It was not enteric fever alone which came forward in this week, but purely climatic fevers of every variety; and, while the exciting cause of all was the same, the type varied according to predisposition and special circumstances.

The extracts which follow, show how, in this week, over a very large portion of the monsoon area, the generally prevailing influences brought about fever among the troops:—

59th Regiment, Nusseerabad.

August 16*th*.—"The health of the regiment is still satisfactory, although there has been an increase in the number of admissions during the week. In two of the fever cases the symptoms point to enteric fever."

The sudden increase of fevers in the week ending 23rd August is noticed as follows:—

"There has been a considerable increase in the admissions for fevers, chiefly of the intermittent type. The number shown as admitted would have been larger, only that, owing to the want of space in hospital, some of the lighter cases have been treated as out-patients."

In the next week the report is the same, namely, that intermittent fevers have been very prevalent, and the admissions have been limited by the want of hospital accommodation.

59th Detachment, Neemuch.

August 16*th*.—"The general health of the detachment continues good."

August 23*rd*.—"A good many cases of fever of a low remittent type have occurred. Four of these men, who were much weakened by the fever, were seized with cholera."

49th Regiment, Mhow.

September 6*th*.—"Malarious fever is very prevalent, and mild cases are frequent in the barracks."

September 13*th*.—"Malarious fever is very prevalent, causing many admissions, and an anæmic condition of the men."

In the next week a man died with enteric lesions.

108th Regiment, Deesa.

September 6*th*.—"The admissions into hospital, on account of ague and fever, are increasing. The weather is very unfavourable for febrile complaints."

E. Battery 18th Brigade, Ahmedabad.

August 23*rd*.—"An increase in the number of admissions from fever. None of the cases are of a severe form."

August 30*th*.—"Febricula prevails, owing to the damp state of the weather."

66th Regiment, Kurrachee.

August 30*th*.—"Bowel complaints and febrile affections continue rather unusually prevalent."

September 13*th*.—"Febrile affections are rather prevalent, and one case of enteric fever has been admitted."

105th Regiment, Meerut.

August 23*rd*.—"The health of the Regiment is not at all satisfactory; fevers are very prevalent."

Detachment, 109th Regiment, Delhi.

August 23*rd*.—"A large increase of admissions from ague since the setting in of the wet weather."

The increase of fever occurred at Umballa in the same week, and, in the 72nd Regiment, 137 cases were admitted during September.

The Surgeon of the 54th, at Jullundur, remarks (August 23rd), that cases of fever and diarrhœa have been numerous during the past week.

54th Detachment, Phillour, 61 strong.

August 23rd.—"The detachment has been sickly during the week. Ten cases of simple continued fever were admitted."*

This sickness means, that the constitution of the British soldier became affected by the peculiar climatic influences prevailing during this week; and there is no reason to conclude that these climatic fevers, which we find designated malarious fever, ague, intermittent fever, low remittent fever, febricula, and simple continued fever, were due to the presence of a specific miasm. And I regard the typhoid of the young, which we meet with in India, only as another expression of the effects of adverse climate. Why the intestinal glands fill up, and why the infiltration is followed by a fever of three weeks' normal duration, is a study for the physiologist and the clinical physician.

I have shown how, in the 40th and 51st Regiments, in the present year, the prevalence of the heat fevers of April was immediately followed by the selection of a certain number of the young men in whom enteric fever became developed. From the 12th August to the 27th, an almost rainless break in the monsoon occurred, after a steady rainfall of six weeks, from 28th June. The usual consequence of such a break is the increased prevalence of fever or bowel complaints; and, as in the former case, enteric fever came forward in constitutions specially predisposed to it. The annual heat fevers of the hot months, and the fevers generally called malarious, which prevail during the monsoon season and after its close, are, as a rule, of climatic significance. Epidemic malaria has a natural history of its own, apart from the fact that, as a specific agent, it produces fever; and the study of this natural history tends to teach, that the specific agent present during invading epidemics of malaria, has not, in an invaded locality, any more than cholera, the ability to abide as a perennially existing miasm.

14. Two regiments, neither of which had recently arrived, had a large proportion of cases of enteric fever. The fact suggests, naturally, that some local cause may have in their case exaggerated the disease. And that this may have been the case in one instance is possible. For we find as a coincidence, that the later cases of typhoid were not confined to the young men.

In the 2-24th Regiment at Secunderabad, while the earliest cases, those of May, occurred in boys of 19 and 21, the fatal cases of August, September and October, five in number, were of the ages of 23, 27, 28, 29 and 33.

But in the second case, the 59th at Nusseerabad, no such phenomenon was observed; the earliest cases of August 29th and September 9th were of the ages of 25 and 26, and the five cases, which occurred subsequently, were all in lads aged 15, 19, 19, 21, and 23.

Conclusion.

15. Many pages might be filled with extracts from the Weekly Returns of Medical Officers in all parts of India, showing that the cases which they record were unmistakably cases of true typhoid fever. Such extracts were indeed prepared for publication, but to produce them would be merely to reprint what appeared in last year's report, and to burden this note with details of clinical observations substantially the same as those which were then so fully given.

And once, again, I would have it kept clearly in view, that it does not follow that, because typhoid puts on the aspect in which I here represent it, this is the only aspect under which enteric fever shews itself. When I point to the very large number of bodies of men affected by a certain aggregate, giving an exceedingly limited average to each, and the distribution of the disease by individual cases, I do not forget that there is a typhoid which affects communities as well as individuals. I do not doubt that the etiology of these varieties is to be studied separately; and from the combined study, we may in time come to understand what the physiological significance of the typhoid deposit is, and under what condition it takes place in individuals, and, as well, how, through one common agency, a community may become infected with enteric fever.

---

* This small detachment, composed of men in their first hot season in India, lost four men from fever, between August 28th and September 22nd.

Enteric Fever among Native Troops.

16. In the Regular Native Army four deaths from enteric fever were returned in 1872, three by Mr. Lyons, and one by Mr. Verchere.

Mr. Lyons remarks on the first case—(Æt. 22, changed from dengue) "No spots were observed, and constipation occurred. At the *post mortem* examination the intestines were found healthy throughout, except in the lower four inches of the ileum, where three large ulcers and five or six small ones were found."

In the second case (Æt. 28), sloughing of the ileocæcal valve and of the cæcum was found. Sloughing occurred also in parts of the whole tract of the large intestines.

The third case was complicated with pneumonia. Two rose-coloured spots were detected, one on the day of death, and the other on the day preceding. Mr. Lyons notes that the whole intestinal tract was healthy except the lower eighteen inches of the ileum. Here the gut was very much thickened and deeply injected, both on its mucous and peritonial surface. The mucous membrane was in folds, and lying upon these, were shreds of false membrane. The calibre of the gut was contracted, especially at the entrance into the cæcum, and in this situation ulceration was found. No enlargement of the solitary glands or of Peyer's patches was observed.

Mr. Verchere's case occurred in a young Goorkha, aged 19. He says—"*Post mortem* examination showed the characteristic and specific lesion of the bowels."

The only case in the Frontier Force was also in a Goorkha (aged 22), a recruit who had joined the Regiment ten days before his admission into hospital.*

Surgeon Johnson, of the 5th Goorkhas, writes—"The fatal case of typhoid fever was that of a recruit who joined head-quarters on the 5th June. During the first few days of treatment profuse perspiration with apparent remissions of pyrexia occurred with great regularity every evening at about 6 P. M., and the case was accordingly regarded as one of ordinary intermittent fever. But on the 22nd, typhoid symptoms became so striking that I removed the patient to a separate ward for treatment. He lay in a listless semi-conscious state; the tongue was brown and dry; sordes on teeth and gums; pulse rapid and fluttering; abdomen distended, apparently painful on pressure, and with distinct gurgling in both iliac regions. No eruption or spots could be found, and there was little or no diarrhœa. Pyrexia, which was continuous, increased in intensity from 10 or 11 A. M. to 6 P. M., when profuse perspiration generally broke out. He died on 27th. A *post mortem* examination showed congestion, enlargement and ulceration of Peyer's patches, or glands in the lower three feet of ileum.

The same officer returns a fatal case as ague, which had many of the symptoms of typhoid, but a *post mortem* examination was not obtained. The fever occurred in a boy of the Peshawar Mountain Train Battery at Abbottabad. He died on 31st January. On 21st, hæmorrhage from the bowels set in, and the fever assumed a low typhoid type. There was persistent diarrhœa with iliac gurgling and tympanites, but no rash could be detected.

Enteric Fever in the Jails of Bengal.

17. Among the jail population, out of a total mortality of 2,674, four deaths were attributed to enteric fever. In the Alipore Jail a young woman, of 20, died, and it is stated that the characteristic lesion of the small intestines was present.

At Cuttack, a man, aged 22, died 14 days after admission to jail. He had the fever when he was imprisoned. Nothing is said regarding the specific intestinal lesion.

At Arrah, a man, aged 32, died. He also is supposed to have been suffering from the fever before coming to jail. It is added—"The intestines presented traces of inflammation, particularly towards the end of the ileum, and in the cæcum, where there were distinct ulcers."

No details are given regarding the case at Jubbulpore. The patient, aged 25, died from pneumonia, after an illness of 28 days.

---

* In connection with this typhoid in Goorkhas and the infiltration of the glands of Peyer and the mesenteric glands, it is interesting to note that the four deaths in the Native Army from Tuberculosis Mesenterica occurred in Goorkhas.

ANNUAL RETURNS

OF THE

EUROPEAN ARMY OF INDIA

AND OF THE

NATIVE ARMY

JAIL POPULATION OF THE BENGAL PRESIDENCY

FOR THE YEAR

1872

COMPILED AND SYSTEMATICALLY ARRANGED FROM THE ORIGINAL DOCUMENTS BY

JAMES L. BRYDEN, M.D.,

SURGEON MAJOR, BENGAL MEDICAL SERVICE;

STATISTICAL OFFICER ATTACHED TO THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

EUROPEAN TROOPS, 1872.

EUROPEAN TROOPS, 1872.

I.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of INDIA during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.	Suicidal Deaths.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	57,894	2,993	51·7	74	1·28	...	3	6	1	2	...	1	...	5	...	11	1	10	4	14	...	1	...	...	6	9	...
February ...	58,028	2,889	49·8	63	1·08	...	1	2	...	4	1	1	2	5	...	9	...	7	3	7	...	...	...	1	11	7	2
March ...	59,916	2,848	47·5	50	·83	1	1	2	...	1	1	5	...	4	...	6	...	4	6	6	...	...	1	...	8	3	1
April ...	59,681	2,960	49·6	60	1·01	7	2	7	...	1	1	6	2	4	...	5	...	3	7	3	...	...	...	...	6	3	3
May ...	59,282	3,227	54·4	113	1·91	23	4	13	...	6	3	18	1	9	1	10	...	6	5	3	...	...	...	1	4	2	4
June ...	59,156	3,334	56·4	131	2·21	22	...	10	...	1	3	48	1	4	2	10	...	3	5	6	...	...	1	...	10	2	3
July ...	58,930	3,312	56·2	119	2·02	35	...	12	...	1	2	11	1	5	...	13	...	5	6	5	...	1	...	2	8	5	7
August ...	58,817	3,622	61·6	261	4·40	171	...	14	...	4	6	9	1	16	2	11	...	2	5	5	...	...	1	...	10	4	4
September ...	58,382	3,950	67·7	236	4·04	111	...	24	1	8	3	10	2	21	3	20	...	2	12	4	...	...	...	...	11	4	...
October ...	58,112	3,894	67·0	166	2·86	51	...	9	1	12	4	3	1	15	1	26	...	6	7	7	...	...	...	1	10	7	5
November ...	59,126	3,481	58·9	69	1·16	5	...	5	2	5	1	1	...	9	1	10	...	2	4	6	...	...	...	...	10	5	3
December ...	59,121	3,161	53·5	80	1·35	1	...	6	1	4	1	1	...	13	...	13	...	6	11	7	...	...	...	1	8	6	1
						427	11	110	6	49	26	114	11	109	10	144	1	56	75	73	...	2	3	6	102	57	33
						Died per 1,000 of the Average Strength.																					
For the year ...	58,870	3,306	56·2	1,425	24·21	7·25	·19	1·87	1·38			1·93	·19	1·85	·17	2·45	·02	·95	1·28	1·24	...	·03	·05	·10	1·73	·97	·56

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	30	2	302	726	867	497	1,042	721	1,309	1,150	557	283	7,480	127·2	...
Cholera ...	...	...	1	10	34	28	51	282	155	67	5	1	634	10·7	67·35
Smallpox ...	9	6	10	9	9	5	5	...	...	...	...	1	54	·9	20·37
Enteric Fever ...	15	13	12	15	25	15	19	24	35	18	8	22	221	3·8	49·77
Fever, Intermittent ...	860	592	629	937	942	875	1,055	1,413	2,171	3,959	2,860	2,179	18,472	313·8	...
„ Remittent ...	67	59	51	90	55	79	100	152	447	620	319	180	2,219	158·5	·80
„ Continued ...	212	240	385	628	688	891	810	762	919	796	412	341	7,114		
Apoplexy ...	2	6	9	16	34	112	31	26	15	9	5	3	268	4·5	42·54
Delirium Tremens ...	26	20	13	21	19	14	29	25	31	22	16	9	245	4·2	4·49
Dysentery ...	195	116	95	154	174	167	251	342	336	345	211	247	2,633	44·7	4·14
Diarrhœa ...	260	159	192	310	304	275	697	814	464	378	216	341	4,410	74·9	·23
Hepatitis ...	216	192	174	255	219	280	302	285	312	371	236	264	3,106	52·8	4·64
Spleen Disease ...	16	34	19	31	24	29	28	24	16	32	25	25	303	5·1	...
Respiratory Diseases ...	448	386	355	383	306	276	324	265	232	345	326	388	4,034	68·5	1·36
Phthisis Pulmonalis ...	48	34	33	36	34	47	59	48	44	75	51	71	580	9·9	12·59
Scurvy ...	3	2	3	1	1	3	4	2	1	5	1	2	28	·5	...
Rheumatism ...	352	202	275	315	274	260	335	304	276	330	223	258	3,464	58·8	
Venereal Diseases ...	1,347	1,023	1,132	1,346	794	700	868	651	587	726	600	769	10,540	179·0	
Eye Diseases ...	119	94	106	120	130	90	126	126	132	125	64	69	1,310	22·3	
Abscess and Ulcer ...	475	426	403	564	479	491	579	386	352	425	416	360	5,356	91·0	
Wounds and Accidents ...	511	445	457	568	420	422	452	350	318	406	351	471	5,171	87·8	
All other Causes ...	786	645	757	970	838	991	1,155	965	861	1,003	721	701	10,483	178·1	
	5,997	4,756	5,413	7,505	6,670	6,565	8,310	7,967	9,043	11,207	7,623	7,074	88,130		
	Admitted per 1,000 of the Average Strength in each Month.														
	103·6	82·0	90·3	125·7	112·5	110·9	141·0	135·5	154·9	192·8	128·9	119·6	1497·0		

EUROPEAN TROOPS, 1872.

II.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of the BENGAL PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.	Suicidal Deaths.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	35,743	1,811	50·7	52	1·45	...	3	4	1	1	...	...	...	4	...	7	1	8	3	6	...	1	...	...	5	8	...
February .	36,732	1,760	47·9	37	1·01	...	1	1	...	4	1	1	1	1	...	6	...	6	1	2	...	...	...	1	8	2	1
March .	37,045	1,741	47·0	33	·89	1	1	..	...	1	1	3	...	3	...	4	...	4	4	3	...	...	1	...	3	3	1
April ..	37,057	1,810	49·1	33	·89	5	...	3	...	1	1	1	...	1	...	3	...	2	4	3	...	...	...	...	5	2	2
May ...	36,739	2,053	55·9	77	2·10	20	2	10	...	6	1	4	1	5	1	6	...	6	5	2	...	...	...	1	3	1	3
June	36,642	2,134	58·2	82	2·24	18	...	7	...	1	1	27	...	3	2	4	...	1	4	2	...	...	1	...	8	1	2
July .	36,523	2,125	58·2	78	2·14	24	...	9	...	1	1	5	...	4	...	11	...	4	2	4	...	...	...	1	4	2	6
August ...	36,372	2,319	63·8	219	6·02	162	...	8	...	4	6	6	1	8	2	6	...	1	2	3	...	...	1	...	5	3	1
September ...	36,068	2,530	70·2	187	5·18	104	...	9	1	7	3	10	2	12	3	14	...	2	7	3	...	...	...	...	7	3	...
October ...	35,869	2,478	69·1	123	3·43	50	...	6	...	10	2	...	...	10	1	15	...	6	3	4	...	...	...	...	7	4	5
November ...	36,479	2,164	59·3	42	1·15	4	...	2	1	5	...	1	...	7	1	5	...	2	1	1	...	...	...	...	7	3	2
December ..	36,818	1,927	52·3	39	1·06	1	...	...	1	3	...	...	...	6	...	5	...	6	5	3	...	...	...	1	3	4	1
						389	7	59	4	41	17	58	5	64	10	86	1	48	41	36	...	1	3	4	65	36	24
						Died per 1,000 of the Average Strength.																					
For the year ...	36,507	2,072	56·8	1,002	27·45	10·66	·19	1·62	1·78			1·59	·14	1·75	·27	2·36	·03	1·32	1·12	·98	..	·03	·08	·11	1·78	·98	·66

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ..	...	...	7	196	316	76	241	466	1,126	1,006	455	156	4,045	110·8	...
Cholera ...	...	..	1	6	31	24	38	271	143	66	3	1	584	16·0	66·61
Smallpox ..	4	4	2	2	3	5	4	...	...	...	...	1	25	·7	28·00
Enteric Fever ...	7	5	3	7	16	11	11	11	12	11	5	4	103	2·9	57·28
Fever, Intermittent ...	537	396	430	649	656	631	741	969	1,27[illegible]	2,159	1,777	1,298	11,514	315·4	...
„ Remittent ...	48	43	33	80	52	78	92	145	401	569	305	153	1,999	180·5	·93
„ Continued ...	124	107	146	336	427	558	576	578	755	660	227	156	4,590		
Apoplexy ..	...	1	4	7	10	72	21	21	13	4	3	1	157	4·3	36·94
Delirium Tremens ...	14	7	7	8	13	8	17	18	22	12	12	9	147	4·0	3·40
Dysentery ...	91	35	48	84	97	87	108	158	181	188	96	103	1,276	35·0	5·02
Diarrhœa ..	153	86	108	207	190	181	447	555	337	264	119	184	2,831	77·5	·35
Hepatitis ...	122	112	113	176	153	206	211	188	210	245	159	148	2,043	56·0	4·21
Spleen Disease ...	15	25	12	18	17	25	22	24	13	27	21	18	237	6·5	...
Respiratory Diseases ...	282	249	222	249	226	186	225	196	161	237	254	274	2,761	75·6	1·70
Phthisis Pulmonalis ...	22	15	14	25	21	26	38	30	34	46	35	41	347	9·5	10·37
Scurvy ...	1	..	...	1	1	3	3	1	1	4	1	1	17	·5	...
Rheumatism ...	240	203	193	204	152	163	222	180	195	234	158	177	2,336	64·0	·48
Venereal Diseases ...	911	689	789	935	545	499	544	405	359	459	375	455	6,965	190·7	
Eye Diseases ...	82	61	68	82	104	66	86	76	[illegible]	88	45	48	891	24·4	
Abscess and Ulcer ..	280	251	217	299	259	258	341	188	187	228	214	206	2,928	80·2	
Wounds and Accidents ..	321	246	292	336	245	262	257	191	190	236	221	308	3,105	85·0	
All other Causes ..	432	385	407	558	407	611	716	618	566	659	472	452	6,373	174·6	
	3,695	2,919	3,116	4,465	4,031	4,036	4,961	5,295	6,268	7,337	4,957	4,194	55,274		
	Admitted per 1,000 of the Average Strength in each Month.														
	103·4	79·5	84·1	120·5	109·7	110·1	135·8	145·6	173·8	204·5	135·9	113·9	1514·1		

EUROPEAN TROOPS, 1872.

III.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of the MADRAS PRESIDENCY during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.	Suicidal Deaths.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	11,149	639	57·3	11	·99	...	...	1	..	1	...	...	...	1	...	2	...	...	1	3	...	...	...	...	1	1	...
February ...	11,014	673	61·1	14	1·27	...	...	...	...	...	...	...	1	3	...	2	...	...	...	4	...	...	...	...	2	1	1
March ...	12,017	640	53·3	11	·92	...	...	2	...	...	...	2	...	1	...	1	...	...	1	2	...	...	...	...	2	...	...
April ...	11,605	618	53·3	17	1·47	...	...	3	...	...	...	5	2	1	...	1	...	...	3	...	...	...	...	...	1	1	...
May ...	11,540	675	58·5	23	1·99	...	2	1	...	...	2	11	...	3	...	2	...	...	...	...	...	...	...	...	1	1	...
June ...	11,500	700	60·9	22	1·91	1	...	3	...	...	2	3	1	1	...	6	...	1	1	2	...	...	...	...	1	...	...
July ...	11,456	680	59·4	14	1·22	...	...	3	...	...	1	3	...	1	...	1	...	...	2	1	...	...	...	...	1	1	...
August ...	11,447	757	66·1	18	1·57	...	...	3	...	...	...	2	...	3	...	3	...	...	3	1	...	...	...	...	2	...	1
September ...	11,394	800	70·2	24	2·11	...	...	6	...	...	...	...	...	7	...	3	...	...	3	...	...	...	...	...	4	1	...
October ...	11,347	753	66·4	27	2·38	...	...	1	...	1	1	1	...	4	...	10	...	...	4	1	...	...	...	1	1	2	...
November ...	12,106	683	56·4	11	·91	1	...	...	...	...	...	...	...	1	...	3	...	...	2	2	...	...	...	...	1	1	...
December ...	11,948	623	52·1	27	2·26	...	...	4	...	...	...	1	...	6	...	4	...	...	4	3	...	...	...	...	3	2	...
						2	2	27	...	2	6	28	4	32	...	38	..	1	24	19	...	...	...	1	20	11	2
						Died per 1,000 of the Average Strength.																					
For the year ...	11,544	687	59·5	219	18·98	·17	·17	2·34	·69			2·43	·35	2·77	...	3·29	...	·09	2·08	1·65	...	...	...	·09	1·73	·96	·17

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	30	2	31	55	201	163	213	104	101	47	7	2	956	82·8	...
Cholera ...	...	...	...	1	..	1	...	...	...	...	2	...	4	·4	50·00
Smallpox ...	4	1	6	1	4	...	...	...	...	...	...	...	16	1·4	12·50
Enteric Fever ...	5	6	9	5	7	4	8	8	10	3	...	13	78	6·8	34·62
Fever, Intermittent ...	59	51	42	62	64	55	86	72	258	415	205	158	1,527	132·3	...
„ Remittent ...	14	10	8	8	...	1	2	3	4	3	1	18	72	135·4	·51
„ Continued ...	47	90	143	173	204	191	126	101	107	88	85	136	1,491		
Apoplexy ...	1	1	3	9	18	13	4	2	...	2	1	2	56	4·8	50·00
Delirium Tremens ...	7	10	4	9	4	3	4	3	3	4	3	...	54	4·7	7·41
Dysentery ...	81	71	40	51	58	60	96	112	111	125	84	94	983	85·1	3·26
Diarrhœa ...	60	45	49	45	56	51	158	136	75	58	71	84	888	76·9	...
Hepatitis ...	63	63	44	50	38	46	52	68	66	82	51	62	685	59·3	5·55
Spleen Disease ...	...	7	4	5	1	1	...	...	2	1	...	2	23	2·0	...
Respiratory Diseases ...	94	94	92	78	40	58	57	52	34	53	43	54	748	64·8	·13
Phthisis Pulmonalis ...	20	16	9	8	7	8	8	8	6	10	10	20	130	11·3	14·62
Scurvy ...	...	1	3	...	...	...	...	1	...	1	...	1	7	·6	...
Rheumatism ...	55	31	58	54	42	49	61	59	34	51	40	46	575	49·8	·457
Venereal Diseases ...	186	177	181	228	144	118	193	150	120	144	116	137	1,900	164·6	
Eye Diseases ...	17	16	21	16	9	10	26	25	28	22	14	12	223	19·3	
Abscess and Ulcer ...	117	117	106	152	133	134	136	118	87	124	118	85	1,427	123·6	
Wounds and Accidents ...	104	125	111	124	106	98	103	97	66	92	73	94	1,188	102·9	
All other Causes ...	212	179	215	268	236	245	290	211	163	219	175	226	2,639	228·6	
	1,176	1,113	1,174	1,402	1,372	1,313	1,623	1,330	1,279	1,543	1,099	1,246	15,670		
	Admitted per 1,000 of the Average Strength in each Month.														
	105·5	101·1	97·7	120·8	119·0	114·2	141·7	116·2	112·3	136·0	90·8	104·3	1357·4		

EUROPEAN TROOPS, 1872.

IV.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS composing the ARMY of the BOMBAY PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.	Suicidal Deaths.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	11,002	542	49·3	11	1·00	...	...	1	...	...	...	1	...	...	...	2	...	2	...	5	...	...	...	...	...	...	...
February ...	10,282	455	44·2	12	1·17	...	...	1	...	...	...	...	...	1	...	1	...	1	2	1	...	...	...	...	1	4	...
March ...	10,854	467	43·0	6	·55	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	3	...	...
April ...	11,019	522	47·4	10	·91	2	2	1	...	...	...	...	...	2	...	1	...	1	...	...	...	...	...	...	...	...	1
May ...	11,003	500	45·4	13	1·18	3	...	2	...	...	...	3	...	1	...	2	...	...	...	1	...	...	...	...	...	...	1
June ...	11,014	501	45·5	27	2·45	3	...	...	...	...	...	18	...	...	...	...	...	1	...	2	...	...	...	...	1	1	1
July ...	10,951	507	46·3	27	2·46	11	...	...	...	...	...	3	1	...	...	1	...	1	2	...	...	1	...	1	3	2	1
August ...	10,998	547	49·8	27	2·45	9	...	3	...	...	...	1	...	4	...	2	...	1	...	1	...	...	...	...	3	1	2
September ...	10,920	620	56·8	25	2·29	7	...	9	...	1	...	...	...	2	...	3	...	...	2	1	...	...	...	...	...	...	...
October ...	10,896	662	60·7	16	1·47	1	...	2	1	1	1	2	1	1	...	1	...	...	...	2	...	...	...	...	2	1	...
November ...	10,541	634	60·1	16	1·52	...	...	3	1	...	1	...	...	1	...	2	...	...	1	3	...	...	...	...	2	1	1
December ...	10,355	559	54·0	14	1·35	...	...	2	...	1	1	...	...	1	...	4	...	...	2	1	...	...	...	...	2	...	...
						36	2	24	2	3	3	28	2	13	...	20	...	7	10	18	...	1	...	1	17	10	7
						Died per 1,000 of the Average Strength.																					
For the year ...	10,810	544	50·3	204	18·86	3·33	·19	2·22	·74			2·59	·19	1·20	...	1·85	...	·65	·92	1·66	...	·09	...	·09	1·57	·92	·65

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	...	...	264	475	350	258	588	151	82	97	95	125	2,485	229·7	...*
Cholera ...	...	...	...	3	3	3	13	11	12	1	...	...	46	4·3	78·26
Smallpox ...	1	1	2	6	2	...	1	...	...	...	...	...	13	1·2	15·38
Enteric Fever ...	3	2	...	3	2	...	...	5	13	4	3	5	40	3·7	60·00
Fever, Intermittent ...	264	146	157	226	222	180	228	372	641	1,385	878	723	5,431	502·0	·04
„ Remittent ...	5	6	10	2	3	...	6	4	42	48	13	9	148	109·2	·51
„ Continued ...	41	43	96	119	57	142	108	83	87	108	100	49	1,033		
Apoplexy ...	1	4	2	...	6	27	6	3	2	3	1	...	55	5·1	50·91
Delirium Tremens ...	5	3	2	4	2	3	8	4	6	6	1	...	44	4·1	4·55
Dysentery ...	23	10	7	19	19	20	47	72	44	32	31	50	374	34·6	3·48
Diarrhœa ...	47	28	35	58	58	43	93	123	52	56	26	73	681	63·0	...
Hepatitis ..	31	17	17	29	28	28	39	29	36	44	26	54	378	34·9	5·29
Spleen Disease ...	1	2	8	8	6	3	6	...	1	4	4	5	43	4·0	...
Respiratory Diseases ...	72	43	41	56	40	82	42	17	37	56	29	60	525	48·5	1·34
Phthisis Pulmonalis ...	6	3	10	3	6	13	13	10	4	19	6	10	103	9·5	17·48
Scurvy ...	2	1	...	...	...	...	1	...	...	...	...	...	4	·4	25·00
Rheumatism ...	48	28	29	57	80	48	52	59	47	45	25	35	553	51·1	·48
Venereal Diseases ...	250	157	162	183	105	92	119	98	102	123	109	177	1,675	154·8	
Eye Diseases ...	20	17	17	22	17	14	14	25	16	20	5	9	196	18·1	
Abscess and Ulcer ...	78	58	80	113	87	90	102	80	78	73	84	68	1,000	92·4	
Wounds and Accidents ...	86	74	54	108	69	67	92	62	62	78	57	69	878	81·1	
All other Causes ...	142	81	135	144	105	135	149	136	132	125	74	113	1,471	135·9	
	1,126	724	1,123	1,638	1,267	1,216	1,726	1,342	1,496	2,327	1,507	1,634	17,186		
	Admitted per 1,000 of the Average Strength in each Month.														
	102·3	70·4	103·5	148·6	115·1	110·4	157·6	122·0	137·0	213·6	148·6	157·8	1588·5		

* Three men died from Heat Apoplexy while suffering from Dengue.

EUROPEAN TROOPS, 1872.

V.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY in the ARMIES of the THREE PRESIDENCIES for the Year 1872.

	Ratios per 1,000 of Strength.			
	Army of Bengal.	Army of Madras.	Army of Bombay.	Army of India.
I.—Average Daily Sick-rate of each Month.				
January	50·7	57·3	49·3	51·7
February	47·9	61·1	44·2	49·8
March	47·0	53·3	43·0	47·5
April	49·1	53·3	47·4	49·6
May	55·9	58·5	45·4	54·4
June	58·2	60·9	45·5	56·4
July	58·2	59·4	46·3	56·2
August	63·8	66·1	49·8	61·6
September	70·2	70·2	56·8	67·7
October	69·1	66·4	60·7	67·0
November	59·3	56·4	60·1	58·9
December	52·3	52·1	54·0	53·5
Average of the Year	56·8	59·5	50·3	56·2
II.—Composition of the Admission-rate of the Year.				
Dengue	110·8	82·8	220·7	127·2
Cholera	16·0	·4	4·3	10·7
Enteric Fever	2·9	6·8	3·7	3·8
Intermittent Fevers	316·4	132·3	602·0	313·8
Remittent and Continued Fevers	180·5	135·4	109·2	158·5
Apoplexy	4·3	4·8	5·1	4·5
Delirium Tremens	4·0	4·7	4·1	4·2
Dysentery	35·0	85·1	34·6	44·7
Diarrhœa	77·5	76·9	63·9	74·9
Hepatitis	56·0	59·3	34·9	52·8
Spleen Disease	6·5	2·0	4·0	5·1
Respiratory Diseases	75·6	64·8	48·5	68·5
Phthisis Pulmonalis	9·5	11·3	9·5	9·9
Rheumatism	64·0	49·8	51·1	58·8
Venereal Diseases	190·7	164·6	154·8	179·0
Eye Diseases	24·4	19·3	18·1	22·3
Abscess and Ulcer	80·2	123·6	92·4	91·0
Wounds and Accidents	85·0	102·9	81·1	87·8
All other Causes	175·8	230·6	137·5	170·6
Admission-rate of the Year	1514·1	1357·4	1588·5	1497·0
III.—Composition of the Death-rate of the Year.				
Cholera	10·06	·17	3·33	7·25
Enteric Fever	1·02	2·34	2·22	1·87
Intermittent Fevers Remittent and Continued Fevers	1·78	·69	·74	1·38
Apoplexy	1·59	2·43	2·59	1·93
Delirium Tremens	·14	·35	·19	·19
Dysentery	1·75	2·77	1·20	1·85
Diarrhœa	·27	...	...	·17
Hepatitis	2·36	3·29	1·85	2·45
Spleen Disease	·03	...	...	·02
Respiratory Diseases	1·32	·09	·05	·95
Heart Diseases	1·12	2·08	·92	1·28
Phthisis Pulmonalis	·98	1·65	1·66	1·24
Injuries	1·19	1·05	1·01	1·07
Suicidal Death	·66	·17	·65	·58
All other Causes	2·08	1·90	1·85	2·00
Death-rate of the Year	27·45	18·98	18·86	24·21
	Died out of each hundred cases treated.			
IV.—Mortality relative to the number treated.				
Cholera	66·61	50·00	78·26	67·35
Enteric Fever	57·28	34·62	60·00	49·77
Remittent and Continued Fevers	·93	·51	·51	·80
Apoplexy	36·67	50·00	50·91	41·80
Delirium Tremens	3·40	7·41	4·55	4·49
Dysentery	5·03	3·26	3·48	4·14
Hepatitis	4·21	5·55	5·29	4·64
Respiratory Diseases	1·70	·18	1·34	1·36
Phthisis Pulmonalis	10·37	14·62	17·48	12·59

EUROPEAN TROOPS, 1872.

VI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in BENGAL PROPER during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	1,820	112	61·6	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
February ...	1,832	114	62·2	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
March ...	1,965	109	55·5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	2,015	122	60·6	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...
May ...	2,013	149	74·0	6	...	...	...	...	...	...	...	2	...	...	1	...	...	...	2	1	...	...	...	...	...	...
June ...	2,007	143	71·2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July ...	1,994	143	71·7	6	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	1	1
August ...	1,984	148	74·6	3	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...
September ...	1,974	144	72·9	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2
October ...	1,954	121	61·9	6	...	...	...	...	...	2	...	...	...	1	...	2	...	1	...	...	...	...	...	...	...	...
November ...	2,116	114	53·9	3	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
December ...	2,018	114	56·5	3	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
						2	...	...	...	5	...	3	...	2	1	5	...	3	4	3	...	...	...	...	3	5
						Died per 1,000 of the Average Strength.																				
For the year ...	1,974	128	64·8	36	18·23	1·01	...	...	2·53			1·52	...	1·01	·51	2·53	...	1·52	2·03	1·52	...	...	...	...	1·52	2·53

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	...	...	7	196	309	71	60	36	1	...	...	...	680	344·5	...
Cholera	...	...	...	...	...	...	1	...	1	...	1	...	3	1·5	66·67
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	...	...	1	...	1	...	...	...	...	...	...	...	2	1·0	...
Fever, Intermittent ...	28	13	13	17	25	45	53	41	26	26	28	30	345	174·8	...
„ Remittent ...	16	9	9	27	2	8	13	21	14	28	30	7	184	259·4	·98
„ Continued ...	12	11	19	40	22	27	71	53	20	17	13	23	328		
Apoplexy ...	...	...	1	2	2	3	...	1	1	1	...	1	12	6·1	25·00
Delirium Tremens ...	...	...	...	...	...	...	...	2	1	...	1	...	4	2·0	...
Dysentery	7	5	10	9	8	6	15	18	15	11	8	11	123	62·3	1·63
Diarrhœa	14	4	1	6	14	6	19	19	21	9	2	8	123	62·3	·81
Hepatitis	17	8	13	9	9	18	20	26	25	30	16	15	206	104·4	2·43
Spleen Disease ...	...	2	...	1	3	2	...	3	1	...	1	1	14	7·1	...
Respiratory Diseases ...	7	9	7	9	10	11	19	12	7	18	18	16	143	72·4	2·10
Phthisis Pulmonalis ...	1	1	4	5	2	3	7	7	7	3	6	2	48	24·3	6·25
Scurvy ...	...	...	...	...	...	...	...	...	...	1	...	...	1	·5	...
Rheumatism ...	7	3	5	6	16	18	15	15	12	10	9	9	125	63·3	·50
Venereal Diseases ...	47	42	47	33	22	21	32	21	21	24	20	41	371	187·9	
Eye Diseases ...	...	3	2	1	3	4	6	...	1	2	...	5	27	13·7	
Abscess and Ulcer ...	13	16	9	10	14	19	19	12	15	9	12	6	154	78·0	
Wounds and Accidents ...	26	26	25	28	21	16	23	8	17	17	20	18	245	124·1	
All other Causes ...	24	23	27	36	24	36	63	60	43	62	45	26	469	237·6	
	219	175	200	435	507	314	436	355	249	268	230	219	3,607		
	Admitted per 1,000 of the Average Strength in each Month.														
	120·3	95·5	101·8	215·9	251·9	156·4	8·7	178·9	126·1	137·2	108·7	108·5	1827·2		

EUROPEAN TROOPS, 1872.

VII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the DINAPORE, BENARES, OUDE and CAWNPORE DISTRICTS during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	7,520	407	54·1	11	...	...	...	2	...	...	...	...	...	1	...	2	...	...	...	2	...	...	...	...	2	2
February ...	7,218	376	52·1	4	...	...	...	1	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...
March ...	8,683	409	47·1	8	...	...	...	...	...	...	1	...	...	1	...	2	...	1	...	...	...	...	...	...	1	2
April ...	8,518	431	50·6	10	...	4	...	2	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1
May ...	8,483	465	54·8	26	...	15	2	3	...	3	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1
June ...	8,464	502	59·3	21	...	6	...	...	...	...	1	9	...	...	1	1	...	...	1	...	...	...	...	...	1	1
July ...	8,436	513	60·8	17	...	7	...	...	...	...	1	2	...	...	...	3	...	...	1	...	...	...	...	...	1	2
August ...	8,412	582	69·2	44	...	29	...	2	...	1	2	...	...	3	...	1	...	1	2	...	...	...	...	...	2	1
September ...	8,353	619	74·1	41	...	26	...	...	...	1	1	4	...	2	1	1	...	...	3	1	...	...	...	...	1	...
October ...	8,322	597	71·7	15	...	3	...	...	...	...	...	...	...	2	...	6	...	...	...	1	...	...	...	...	2	1
November ...	8,281	492	69·4	5	...	1	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1
December ...	8,318	423	50·9	11	...	1	...	...	...	...	...	...	...	1	...	1	...	3	...	1	...	...	...	...	2	2
						92	2	10	...	7	6	15	..	11	2	22	...	5	8	6	...	...	...	..	13	14
						Died per 1,000 of the Average Strength.																				
For the year ...	8,251	485	58·8	213	25·81	11·15	·24	1·21	1·58			1·82	...	1·33	·24	2·67	..	·60	·97	·73	...	...	.	.	1·58	1·69

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...		...	...	...	6	5	181	423	742	682	304	101	2,444	296·2	...
Cholera ..	...	...	...	5	23	8	10	56	39	2	2	1	146	17·7	63·01
Smallpox ...	...	...	...	...	3	2	1	...	...	...	...	...	6	·7	33·33
Enteric Fever ..	3	3	1	4	4	1	2	4	1	2	...	3	28	3·4	35·72
Fever, Intermittent ..	41	35	68	121	112	114	144	119	118	189	92	58	1,211	146·8	...
„ Remittent ..	5	3	...	7	7	7	6	9	14	11	10	6	85	107·0	1·48
„ Continued ...	31	14	32	72	63	120	96	75	94	119	37	44	797		
Apoplexy .	...	...	1	1	5	25	5	1	5	...	...	...	43	5·2	34·88
Delirium Tremens ...	5	...	3	1	1	2	1	2	3	1	2	1	22	2·7	.
Dysentery ..	27	7	10	25	21	19	28	45	31	54	17	36	320	38·8	3·44
Diarrhœa ..	14	16	29	44	66	43	82	116	73	49	33	93	658	79·8	·30
Hepatitis ...	32	28	24	33	40	52	43	39	51	65	30	35	472	57·2	4·66
Spleen Disease ..	2	4	3	4	4	5	2	...	...	4	5	...	33	4·0	.
Respiratory Diseases .	20	26	40	44	35	34	33	39	33	37	42	59	442	53·6	1·13
Phthisis Pulmonalis ...	3	3	1	5	4	6	10	9	3	18	9	10	81	9·8	7·41
Scurvy ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism ...	30	36	45	36	21	25	41	53	54	79	36	32	491	59·5	·37
Venereal Diseases ..	193	158	248	213	163	137	176	100	97	155	131	122	1,893	229·4	
Eye Diseases ...	32	20	31	28	37	29	41	28	23	24	15	15	323	39·1	
Abscess and Ulcer ..	55	65	55	85	77	78	105	55	45	75	65	59	819	99·3	
Wounds and Accidents . .	54	34	56	79	47	63	69	48	37	57	50	67	660	79·9	
All other Causes ...	95	74	102	120	130	161	170	127	119	150	86	116	1,450	175·7	
	642	520	749	927	872	935	1,246	1,348	1,582	1,773	966	858	12,424		
	Admitted per 1,000 of the Average Strength in each Month.														
	85·4	72·9	86·3	108·8	102·8	110·5	147·7	160·2	189·4	213·0	116·7	103·1	1505·8		

EUROPEAN TROOPS, 1872.

VIII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the MEERUT and ROHILCUND DISTRICTS during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	4,305	216	50·2	5	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...	1	...	...	1	...
February ...	4,482	200	44·6	6	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...	...	...	...	3	...
March ...	4,480	206	46·0	8	...	...	...	...	...	...	...	...	...	...	...	1	...	1	2	3	...	...	...	...	1	...
April ...	4,328	214	49·5	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
May ...	4,213	237	56·2	5	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...
June ...	4,178	238	56·9	6	...	...	...	...	...	...	...	2	...	...	...	2	...	1	...	...	...	...	...	...	1	...
July ...	4,176	231	55·3	3	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
August ...	4,171	268	64·3	14	...	7	...	1	...	1	...	...	1	...	2	2	...	...	...	...	...	...	...	...	...	...
September ...	4,114	315	76·6	59	...	42	...	3	...	1	2	2	2	3	1	1	...	1	...	...	...	...	...	...	1	...
October ...	4,081	310	76·0	17	...	...	...	1	...	2	2	...	...	2	...	2	...	3	...	...	...	...	...	1	3	1
November ...	3,599	189	52·5	12	...	...	...	1	...	1	...	1	...	3	1	1	...	...	...	1	...	...	...	...	2	1
December ...	3,300	172	52·1	8	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1
						49	...	7	...	7	4	5	4	10	4	11	...	11	4	5	...	1	...	1	13	4
						Died per 1,000 of the Average Strength.																				
For the year ...	4,119	233	56·6	140	33·98	11·90	...	1·70	2·67			1·21	·97	2·43	·97	2·67	...	2·67	·97	1·21	...	·24	...	·24	3·16	·97

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	...	...	...	...	1	...	...	1	207	166	44	36	454	110·2	...
Cholera ...	...	...	...	...	...	...	...	13	59	...	...	...	72	17·5	68·06
Smallpox ...	...	...	...	1	...	1	...	...	...	...	...	...	2	·5	...
Enteric Fever .	...	...	...	1	2	...	1	1	3	3	1	...	12	2·9	58·33
Fever, Intermittent ...	61	67	75	111	137	100	126	273	186	343	122	68	1,669	405·2	...
„ Remittent ..	2	2	3	6	7	9	9	19	9	13	6	3	88	123·1	2·17
„ Continued ...	1	9	13	26	18	48	50	55	97	68	10	4	419		
Apoplexy ...	...	1	...	3	1	7	9	6	3	1	1	...	32	7·8	15·63
Delirium Tremens ...	4	4	1	1	1	1	3	4	4	1	3	...	27	6·6	14·82
Dysentery ...	27	2	5	8	12	10	9	26	35	37	20	11	202	49·0	4·95
Diarrhœa ...	28	10	10	32	11	14	31	64	59	43	14	10	335	81·3	1·19
Hepatitis ...	17	12	10	26	22	22	17	22	14	23	11	23	228	55·3	4·83
Spleen Disease ...	2	2	3	6	3	7	7	8	5	5	2	2	52	12·6	...
Respiratory Diseases ...	30	49	42	43	37	43	34	28	35	33	27	21	422	102·5	2·37
Phthisis Pulmonalis ..	3	1	3	1	2	...	2	5	...	3	...	3	23	5·6	21·74
Scurvy ...	...	...	...	...	1	...	1	1	1	1	...	...	5	1·2	20·00
Rheumatism... ...	50	39	31	31	21	23	26	38	15	46	20	25	365	88·6	·68
Venereal Diseases ...	95	95	65	81	40	53	57	35	44	38	28	38	669	162·4	
Eye Diseases ..	8	8	3	9	16	4	7	5	6	5	6	6	83	20·2	
Abscess and Ulcer ...	34	39	36	40	36	37	46	27	19	23	15	26	384	93·2	
Wounds and Accidents ...	50	38	22	44	26	36	31	28	14	11	18	28	346	84·0	
All other Causes ...	62	71	66	78	61	50	88	64	68	87	61	48	794	192·8	
	474	440	408	554	455	465	554	723	873	970	409	351	6,093		
	Admitted per 1,000 of the Average Strength in each Month.														
	110·1	100·2	90·6	128·0	108·0	111·3	132·7	173·3	212·2	237·7	113·7	106·4	1622·5		

EUROPEAN TROOPS, 1872.

IX.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the AGRA DISTRICT and in CENTRAL INDIA during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ..	4,390	251	57·2	4	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	1	...	...	...	...	.	
February ..	4,194	228	54·4	2	...	...	...	...	...	1	...	...	..	...	...	...	...	...	...	1	...	...	...	...	..	...
March ..	4,207	208	49·4	1	...	...	...	..	...	...	...	...	...	...	...	..	...	1	..	...	..	..	..	..	..	...
April ...	4,263	185	43·4	3		...	...	1	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	..	2	..
May .	4,262	203	47·6	7	...	2	...	...	...	...	...	1	...	1	...	2	...	1	...	...	...	...	...	...	...	.
June ...	4,245	198	46·6	17	...	12	...	...	...	...	...	3	...	...	..	...	...	...	..	...	...	..	..	..	1	1
July ..	4,234	196	46·3	7	...	1	...	...	.	...	...	1	...	..	...	2	...	...	...	1	...	...	...	...	..	2
August . .	4,224	227	53·8	4	...	3	...	...	.	...	...	...	...	...	...	..	...	..	...	1	...	...	...	.	..	..
September ...	4,216	297	70·4	8	...	2	...	...	1	...	...	1	..	..	..	2	...	...	1	...	...	...	...	..	1	..
October ...	4,199	277	66·0	7	...	...	...	...	...	...	...	...	...	1	...	2	...	...	1	1	...	...	...	...	1	1
November ...	4,064	209	51·4	1	...	...	...	...	...	...	...	...	...	...	..	...	...	...	1	..	...	...	...	...	..	...
December ...	4,062	167	41·1	4	...	...	...	...	1	...	...	...	...	1	...	...	...	..	2	...	...	...	...	...	.	...
						20	...	1	2	1	...	6	...	3	...	10	...	3	5	5	..	...	..	..	5	4
						Died per 1,000 of the Average Strength.																				
For the year .	4,213	220	52·2	65	15·43	4·75	..	·24	·71			1·41	...	·71	...	2·38	...	·71	1·19	1·19	...	..	..	...	1·19	·95

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ..	..	...	...	...	...	...	...	6	176	149	38	8	377	89·5	
Cholera ...	...	...	...	...	5	16	5	5	2	...	...	...	33	7·8	60·60
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Enteric Fever ...	1	...	...	1	...	...	...	...	1	...	...	...	3	·7	33·33
Fever, Intermittent ...	211	146	115	128	134	119	154	157	315	367	253	152	2,251	534·3	·09
„ Remittent ...	15	21	19	18	3	6	7	5	15	17	9	3	138	115·8	·20
„ Continued ...	20	10	13	21	27	29	41	53	70	41	11	14	350		
Apoplexy ...	...	...	..	...	1	10	1	1	1	...	1	...	15	3·6	40·00
Delirium Tremens ..	2	1	...	...	2	1	5	2	2	...	...	2	17	4·0	...
Dysentery ...	8	5	5	6	5	6	9	18	9	14	7	7	99	23·5	3·01
Diarrhœa ...	29	11	8	7	5	18	36	33	21	19	5	7	199	47·2	...
Hepatitis ...	8	11	5	15	12	11	16	15	21	21	12	8	155	36·8	6·45
Spleen Disease ...	3	3	3	1	1	4	3	2	3	4	2	3	32	7·6	...
Respiratory Diseases ...	23	31	24	20	29	17	39	13	10	27	17	22	272	64·5	1·10
Phthisis Pulmonalis ...	3	3	2	..	5	3	3	2	7	3	3	6	40	9·5	12·50
Scurvy ...	...	...	...	..	...	1	...	...	...	1	1	...	3	·7	...
Rheumatism ..	38	33	35	32	20	19	32	20	25	22	13	19	308	73·1	·46
Venereal Diseases ...	107	83	77	78	49	44	52	41	33	42	31	26	663	157·4	
Eye Diseases ...	13	8	9	4	7	4	6	8	5	9	3	4	80	19·0	
Abscess and Ulcer ...	27	26	20	31	21	22	24	18	21	19	23	16	268	63·6	
Wounds and Accidents ...	41	22	27	33	23	17	24	17	10	26	16	33	289	68·6	
All other Causes ...	47	50	54	44	47	39	52	60	38	54	35	39	559	132·7	
	596	464	416	439	396	386	509	476	785	835	480	369	6,151		
	Admitted per 1,000 of the Average Strength in each Month.														
	135·8	110·6	98·9	103·0	92·9	90·9	120·2	112·7	186·2	198·9	118·1	90·8	1460·0		

EUROPEAN TROOPS, 1872.

X.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the PUNJAB during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	13,172	634	48·1	24	...	...	3	2	...	.	...	...	.	1	...	2	1	6	2	2	..	...	...	..	1	4
February ..	12,695	632	49·8	13	...	...	1	...	..	2	1	...	...	.	...	1	...	3	.	...	...	...	...	1	2	2
March ...	13,178	594	45·1	6	...	...	1	..	...	...	...	2	..	1	...	1	...	...	.	...	...	...	..	...	...	1
April ...	12,352	545	44·1	11	...	1	...	..	...	..	1	...	..	1	...	1	...	...	3	1	..	...	..	...	1	2
May ..	11,314	573	50·7	22	.	3	...	5	...	2	...	1	1	2	..	1	...	1	2	...	...	...	...	.	1	3
June ...	11,118	628	56·5	30	...	..	...	6	.	1	...	12	..	1	..	1	...	...	3	2	.	..	1	...	2	1
July ...	11,051	601	54·4	26	..	8	...	7	.	...	..	1	...	1	.	3	...	2	1	1	...	...	...	1	...	1
August ...	10,974	674	61·4	114	..	91	...	4	...	1	4	6		3	..	2	...	..	.	1	...	...	...	...	..	2
September ..	10,849	763	70·3	47	..	18	..	5	...	5	...	3	.	4	...	4	...	1	3	1	...	...	...		2	1
October ...	11,566	845	73·1	69	.	45	...	3	..	4	..	...	...	4	1	2	...	1	2	2	...	.	.	...	1	4
November ...	12,746	915	71·8	18	...	2	...	1	1	3	...	...	...	3	..	2	...	1	...	...	...	...	...	.	3	2
December ...	14,402	849	58·9	13	...	...	...	...	...	2	...	...	...	2	...	2	...	2	1	2	...	...	...	...	1	1
						168	5	33	1	20	6	25	1	23	1	22	1	17	17	12	...	..	1	2	14	24
						Died per 1,000 of the Average Strength.																				
For the year ...	12,118	688	56·8	393	32·43	13·86	·41	2·72	2·23			2·06	·08	1·90	·08	1·82	·08	1·40	1·40	1·00	.	...	·08	·17	1·16	1·9

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died on each hundred cases treated.
Dengue .	..	...	...	...	..	..	...	...	..	9	69	3	81	6·7	..
Cholera ..	...	...	...	1	3	...	8	143	18	61	..	..	234	19·3	71·8
Smallpox ...	4	4	2	1	..	2	3	...	...	...	...	1	17	1·4	29·41
Enteric Fever .	3	2	..	1	8	10	6	5	6	4	1	1	47	3·9	70·21
Fever, *Intermittent .	157	100	114	147	125	140	161	312	575	1,187	1,236	926	5,180	427·5	·0
„ Remittent .	9	8	2	18	30	43	46	90	345	497	247	133	1,468	320·7	·6
„ Continued ...	53	59	66	154	256	318	287	321	451	321	148	57	2,491		
Apoplexy .	...	..	2	1	1	27	5	12	3	1	1	...	53	4·4	47·1
Delirium Tremens	2	2	1	6	7	2	5	7	8	9	6	6	61	5·0	1·6
Dysentery ...	14	10	9	23	32	19	32	42	82	63	37	27	390	32·2	5·9
Diarrhœa ...	43	28	25	79	65	50	89	212	113	112	51	52	919	75·8	·1
Hepatitis ...	36	42	36	45	37	67	73	50	65	71	71	57	650	53·6	3·3
Spleen Disease ...	7	14	2	5	2	5	5	7	2	12	9	11	81	6·7	1·2
Respiratory Diseases ...	156	100	79	73	58	47	73	69	43	81	111	126	1,016	83·8	1·6
Phthisis Pulmonalis ...	9	5	3	7	5	9	7	6	10	13	12	17	103	8·5	11·6
Scurvy ...	1	...	...	1	...	...	1	...	..	1	...	1	5	·4	...
Rheumatism ..	77	64	56	55	37	41	56	38	49	50	61	60	644	53·1	·4
Venereal Diseases ...	407	215	264	354	151	149	120	104	85	128	103	158	2,228	183·9	
Eye Diseases ...	22	17	22	25	30	19	19	33	45	34	18	16	300	24·8	
Abscess and Ulcer ...	127	70	71	71	67	72	115	55	50	78	77	80	936	77·3	
Wounds and Accidents..	116	82	136	113	92	97	71	63	78	80	84	125	1,137	93·8	
All other Causes ...	142	115	124	177	148	226	254	214	188	207	193	178	2,166	178·7	
	1,370	937	1,004	1,357	1,154	1,343	1,430	1,783	2,225	3,019	2,535	2,036	20,207		
	Admitted per 1,000 of the Average Strength in each Month.														
	104·7	73·8	76·2	109·9	102·0	120·8	129·9	162·5	205·1	261·0	198·9	141·3	1667·5		

EUROPEAN TROOPS, 1872.

XI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS occupying the HILL STATIONS of the BENGAL PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	2,205	102	44·4	2	...	...	..	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	.
February ...	2,461	99	40·2	2	...	...	...	...	...	...	...	...	...	1	..	...	...	...	...	...	...	...	...	...	1	..
March ...	3,193	147	46·0	1	..	...	.	...	...	...	...	...	..	...	...	...	...	..	1	..	..	...	...	...	...	...
April ...	3,585	140	39·1	...	...	...	...	...	...	...	..	...	..	.	...	...	...	...	...	...	...	...	...	...	..	...
May ...	4,238	191	45·0	5	..	...	...	1	...	...	1	...	...	1	..	...	...	1	...	...	..	...	...	...	1	...
June ...	4,294	193	44·9	5	...	...	...	1	...	...	...	...	...	1	1	...	...	..	...	...	...	...	..	...	2	...
July ...	4,280	214	40·9	6	..	1	...	2	...	...	.	...	...	2	...	...	...	...	..	...	...	..	...	...	1	..
August ...	4,271	188	44·0	22	...	17	...	1	...	...	...	...	..	1	..	...	..	...	...	...	...	...	1	..	1	1
September ...	4,255	179	42·1	9	...	1	...	1	...	...	...	...	...	3	1	1	...	...	...	1	...	...	...	...	1	...
October ...	3,622	145	40·0	7	...	2	...	2	...	...	..	...	...	...	...	1	...	1	...	...	...	..	...	..	...	1
November ..	2,228	83	37·3	1	..	...	...	...	...	..	..	...	...	...	...	...	...	..	..	...	...	...	.	..	1	..
December ...	1,819	61	33·5	1	..	...	..	..	...	..	...	..	...	1	...	..	...	...	...	...	...	...	...	...	...	...
						21	...	8	1	...	1	...	...	10	2	2	...	2	1	1	...	..	1	...	9	2
						Died per 1,000 of the Average Strength.																				
For the year ...	3,379	145	42·9	61	18·06	6·22	...	2·37	·59			...	...	2·96	·59	·59	...	·59	·30	·30	...	...	·30	..	2·66	·59

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
Dengue ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera ...	...	...	...	...	...	...	3	28	1	3	...	...	35	10·4	60·00
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.
Enteric Fever ...	...	...	...	...	1	...	2	1	1	2	...	...	7	2·1	100·00
Fever, Intermittent ...	17	13	15	20	44	20	35	17	22	12	12	12	248	73·4	·40
„ Remittent .	...	...	...	...	1	1	1	...	...	1	...	...	4	41·7	·71
„ Continued ...	3	1	2	7	21	12	28	16	23	14	2	8	137		
Apoplexy ..	...	...	...	...	...	...	...	...	...	1	...	...	1	·3	...
Delirium Tremens .	..	..	2	..	2	1	...	1	1	1	...	...	8	2·4	...
Dysentery ...	4	3	1	2	13	17	11	6	5	7	3	3	75	22·2	13·33
Diarrhœa ...	20	13	21	18	22	87	68	64	17	10	4	5	299	88·5	·67
Hepatitis ...	4	2	11	9	12	15	14	8	12	10	5	3	105	31·1	1·90
Spleen Disease ..	...	..	1	...	2	1	1	1	1	2	...	...	9	2·6	...
Respiratory Diseases ...	19	26	27	24	39	17	14	13	16	20	17	14	246	72·8	·81
Phthisis Pulmonalis ...	..	1	1	1	1	1	4	1	4	2	...	2	18	5·4	5·55
Scurvy ...	...	...	...	...	...	2	1	...	...	...	...	...	3	·9	...
Rheumatism ...	28	16	18	15	25	17	32	13	24	14	9	10	221	65·4	·66
Venereal Diseases ..	30	42	80	47	62	54	53	65	45	21	24	22	545	161·3	
Eye Diseases ...	2	4	...	3	7	6	3	1	8	5	...	...	34	10·0	
Abscess and Ulcer ...	17	20	13	21	21	14	15	11	17	10	5	5	169	50·0	
Wounds and Accidents ...	27	32	24	25	27	22	28	17	25	30	13	16	286	84·6	
All other Causes ...	34	23	22	39	47	52	37	29	55	39	13	21	411	121·6	
	205	196	238	231	347	298	350	292	272	204	107	121	2,861		
	Admitted per 1,000 of the Average Strength in each Month.														
	89·3	79·6	74·5	64·4	81·9	69·4	81·6	68·4	63·9	56·3	48·0	66·5	846·7		

EUROPEAN TROOPS, 1872.

XII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN SOLDIERS occupying the HILL CONVALESCENT DEPOTS of the BENGAL PRESIDENCY during the HOT SEASON of 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																				
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	419	39	...	2	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...
February ...	228	13	...	2	...	...	...	...	..	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...
March ...	96	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ..	1,774	169	95·3	3	...	...	...	...	...	..	..	...	..	...	...	2	...	1	...	...	...	...	...	...	...	...
May ...	2,198	233	106·0	6	.	.	...	...	...	...	...	...	...	1	...	2	..	1	...	1	...	...	...	1	...	...
June ...	2,318	230	99·2	2	.	...	...	..	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
July ...	2,328	226	97·1	13	...	6	...	.	..	...	...	1	...	...	...	2	...	...	...	1	...	...	...	...	1	2
August ...	2,325	231	99·4	17	...	15	...	...	...	...	...	...	..	1	...	...	...	...	...	...	...	...	...	...	1	...
September ...	2,296	212	92·3	20	...	15	...	.	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	1	...
October ...	2,115	183	86·5	2	..	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
November ...	1,684	136	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
December ...	1,131	77	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
						36	...	...	...	2	...	1	...	4	...	12	...	4	1	2	...	...	...	1	4	2
						Died per 1,000 of the Average Strength.																				
For the season. .	2,320*	212	96·7	69	29·74†	15·51	...	...		·86		·43	...	1·73	...	5·17	...	1·73	·43	·86	..	...	...	·43	1·78	·86

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength (April to October, 7 months).	Died out of each hundred cases treated.
	Jan.	Feb.	March	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ..	...	...	...	...	...	...	...	...	...	.	...	.	...	...	..
Cholera ...	...	...	...	...	...	...	11	26	23	...	...	...	60	25·9	60·00
Smallpox ...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever* ...	...	...	...	...	..	...	.	...	...	...	...	...	...	...	...
Fever, Intermittent ...	1	. .	7	101	79	84	67	49	30	34	12	16	480	191·4	...
„ Remittent ...	..	...	...	4	2	4	10	1	4	2	2	1	30	32·3	2·27
„ Continued ..	3	1	...	16	20	4	3	5	...	..	1	5	58		
Apoplexy ...	...	...	...	...	...	...	1	...	...	...	...	...	1	·4	...
Delirium Tremens ...	1	....	...	...	...	1	3	...	3	..	..	...	8	3·0	...
Dysentery .	1	...	3	11	6	10	4	3	4	2	...	2	46	17·2	8·70
Diarrhœa ...	2	...	1	20	7	13	122	47	33	22	5	1	273	113·8	...
Hepatitis ...	3	1	2	30	21	21	28	28	22	25	12	6	208	79·3	5·77
Spleen Disease ...	...	..	...	1	2	1	4	3	1	...	2	1	15	5·2	...
Respiratory Diseases ..	10	4	1	35	18	17	13	22	17	21	16	12	186	61·7	2·15
Phthisis Pulmonalis ...	1	...	..	5	2	4	5	...	3	4	3	1	28	9·9	7·14
Scurvy ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism ...	7	1	1	25	9	20	19	9	16	13	8	15	143	47·8	·46
Venereal Diseases ...	7	1	7	126	58	41	64	39	34	51	18	9	445	173·7	
Eye Diseases .	...	..	1	11	4	...	3	1	6	4	3	2	35	12·5	
Abscess and Ulcer ..	3	...	5	32	23	16	17	10	11	14	11	7	149	53·0	
Wounds and Accidents .	...	1	2	13	9	12	11	10	9	14	11	8	100	33·6	
All other Causes ...	10	5	...	64	40	47	52	64	65	60	30	15	452	169·0	
	49	14	30	503	300	295	427	317	281	266	134	101	2,717		
	Admitted per 1,000 of the Average Strength in each Month.														
	...	...	...	283·5	136·5	127·3	183·4	136·3	122·4	125·8	...	...	1029·7		

---

* The average strength of the season of full occupation—June, July, and August.

† The ratio for all deaths which occurred during the year, calculated on the strength for the season of occupation.

EUROPEAN TROOPS, 1872.

XIII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in RAJPOOTANA, MALWA, SCINDE and ADEN during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	5,662	295	52·1	5	...	...	...	..	..	...	.	...	..	...	..	1	...	1	...	3	...	...	...	...	...	..
February .	5,527	267	48·3	10	...	...	...	1	...	...	..	...	...	1	...	...	...	1	1	1	...	...	...	...	1	4
March ..	5,519	231	41·9	...	...	...	...		...	...	...	..	...	...	...	.	...	..	...	...	...	...	...	...	...	...
April ..	5,544	232	41·8	6	...	2	...	1	...	..	...	...	...	1	...	..	. .	1	...	...	...	...	...	...	...	1
May ...	5,587	230	41·2	10	...	3	...	1	...	...	...	2	...	...	...	2	...	...	...	1	...	...	...	...	...	1
June ...	5,767	247	42·8	21	...	2	...	...	...	...	...	16	...	...	...	.	...	1	.	1	...	...	...	...	...	1
July ...	5,748	284	49·4	14	...	5	...		...	...	...	2	1	...	...		...	1	1	...	...	. .	...	...	1	3
August ...	5,747	311	54·1	18	...	8	...	2	...	...	...	...	...	1	...	2	...	...	...	1	...	...	...	...	2	2
September .	5,739	385	67·1	20		7	...	8	...	1	...	...	...	...	...	3	...	...	...	1	...	...	...	...	...	...
October ..	5,724	426	74·4	11	.	...	...	. .	1	...	1	2	...	1	...	1	...	...	.	2	...	...	...	...	2	1
November	5,411	385	71·2	10	.	..	...	2	1	...	1	...	...	...	...	1	...	...	1	1	...	...	...	...	2	1
December ...	5,075	346	68·2	9		.	...	1	...	...	1	..	...	1	...	2	...	...	1	1	...	...	...	...	2	...
						27	...	16	2	1	3	22	1	5	...	12	..	5	4	12	...	...	..	...	10	14
						Died per 1,000 of the Average Strength.																				
For the year ..	5,587	304	54·4	134	23·98	4·83	...	2·86	1·07			3·94	·18	·89	...	2·15	...	·89	·72	2·15	...	...	...	..	1·79	2·51

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	...	.	3	7	199	155	511	104	7	54	90	122	1,252	224·1	...
Cholera ...	...	...	...	8	3	2	6	10	12	. .	...	...	36	6·1	75·00
Smallpox ..	...	...	...	...	1	...	...	...	...	. .	...	...	1	·2	...
Enteric Fever ..	2	2	...	1	2	...	...	2	12	.	1	1	23	4·1	69·56
Fever, Intermittent ...	91	72	84	134	101	115	126	281	553	1,177	660	510	3,904	698·7	·05
„ Remittent ...	5	6	4	2	3	...	6	3	39	44	2	3	117	113·7	·63
„ Continued ..	7	9	16	36	24	100	72	54	66	58	40	27	518		
Apoplexy ...	...	...	...	...	4	25	6	2	2	3	1	...	42	7·5	52·38
Delirium Tremens ...	4	2	...	4	2	1	8	4	6	5	1	...	37	6·6	2·70
Dysentery ...	10	8	2	10	4	7	17	38	22	23	14	16	171	30·6	2·92
Diarrhœa ...	31	21	23	33	23	22	39	80	37	38	12	27	386	69·1	...
Hepatitis ...	16	9	3	17	20	14	24	19	20	25	16	27	210	37·6	5·71
Spleen Disease ...	1	2	1	3	4	2	...	...	1	1	1	4	20	3·6	...
Respiratory Diseases ...	40	17	13	22	16	14	25	7	15	22	14	34	239	42·8	2·09
Phthisis Pulmonalis ...	3	1	7	...	2	5	7	5	2	4	5	7	48	8·6	25·00
Scurvy ...	1	1	..	...	...	...	...	...	...	...	...	...	2	·4	...
Rheumatism ...	23	14	8	10	18	16	24	21	18	19	13	24	217	38·8	·48
Venereal Diseases ...	147	106	93	90	54	54	53	48	43	52	43	65	854	152·9	
Eye Diseases ...	7	12	9	7	8	5	5	10	9	16	4	6	98	17·6	
Abscess and Ulcer ...	54	39	41	53	43	52	62	45	44	34	37	32	536	96·0	
Wounds and Accidents	59	38	26	58	34	35	52	34	31	41	28	32	468	83·8	
All other Causes ...	66	34	54	76	52	87	97	88	75	69	42	57	797	142·7	
	567	393	387	578	617	720	1,130	858	1,014	1,685	1,024	994	9,976		
	Admitted per 1,000 of the Average Strength in each Month.														
	100·1	71·1	70·1	104·3	110·4	124·8	198·2	149·3	176·7	294·4	189·2	195·9	1785·5		

EUROPEAN TROOPS, 1872.

XIV.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the DECCAN and in NAGPORE during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

(The Garrison of Bombay, drawn chiefly from Regiments serving in the Deccan, is included in this Statement.)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																					
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	7,720	407	52·7	8	...	...	...	2	..	1	...	...	...	1	...	2	...	...	..	3	...	...	...	...	...	...
February ...	7,750	375	48·4	1	...	...	...	...	...	...	...	...	...	...	..	1	...	...	...	...	...	...	...	...	...	...
March ...	8,201	373	45·5	6	...	...	...	1	...		..	1	...	...	...	1	...	...	...	...	...	...	...	...	3	...
April ..	8,650	466	53·9	10	..	...	2	2	...	...	...	1	1	1	...	1	...	...	2	...	...	...	...	...	...	...
May ...	8,622	468	54·3	15	...	...	2	2	...	...	2	8	...	1	...	...	...	...	...	...	...	...	...	...	...	...
June ...	8,608	470	54·2	13	...	2	..	...	..	...	1	4	...	...	...	2	...	1	...	2	...	...	...	...	...	1
July ...	8,652	419	48·4	15	...	6	...	...	...	...	1	2	...	..	...	1	...	.	2	...	...	1	...	..	2	...
August ...	8,636	498	57·7	17	...	1	...	3	...	...	...	..	...	5	...	2	..	1	2	...	...	...	...	...	2	1
September ...	8,614	553	64·2	21	...	...	...	7	...	...	...	...	...	8	.	1	.	...	3	...	...	...	...	..	2	...
October ...	8,516	522	61·3	21	...	...	...	2	..	2	1	..	1	4	..	7	...	...	2	...	...	...	...	...	...	2
November ...	8,185	457	55·8	9	...	1	...	1	..	...	.	..	..	2	...	2	..	...	...	2	..	...	...	..	1	...
December ...	7,460	425	56·9	12	...	...	...	1	..	1	.	.	..	5	..	2	...	...	2	1	...	...	...	...	...	...
						10	4	21	...	4	5	16	2	27	...	22	...	2	13	7	...	1	...	...	10	4
						Died per 1,000 of the Average Strength.																				
For the year ...	8,307	453	54·5	148	17·81	1·20	·48	2·53	1·08			1·93	·24	3·25	...	2·65	...	·24	1·57	·84	...	·12	...	...	1·20	·48

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	...	...	243	456	150	103	77	45	67	42	5	3	1,101	143·3	...
Cholera ..	...	...	...	1	...	2	7	1	...	...	2	...	13	1·6	76·92
Smallpox ...	3	1	4	6	4	...	1	...	...	...	...	..	19	2·3	21·05
Enteric Fever ...	3	2	3	6	4	1	3	6	11	6	2	4	51	6·1	41·18
Fever, Intermittent ..	92	60	56	80	102	65	79	122	302	534	293	222	2,007	241·6	...
„ Remittent ...	14	10	12	7	...	...	1	3	4	7	11	5	74	152·8	·71
„ Continued	44	41	82	103	164	167	101	100	87	104	98	44	1,195		
Apoplexy ..	1	...	1	5	13	13	3	...	...	...	1	...	37	4·5	43·24
Delirium Tremens ...	3	2	3	3	...	3	2	3	1	3	...	...	23	2·8	8·70
Dysentery ..	36	24	11	22	31	35	64	93	96	85	62	74	633	76·2	4·27
Diarrhœa ..	26	19	23	31	43	31	148	133	61	54	26	66	661	79·6	..
Hepatitis ..	24	15	16	15	10	17	16	30	83	60	29	43	298	35·9	7·38
Spleen Disease ...	...	2	2	6	2	1	6	...	...	2	...	...	21	2·5	...
Respiratory Diseases ...	74	62	52	45	34	81	97	28	82	46	82	35	508	61·1	·39
Phthisis Pulmonalis .	4	3	3	3	6	9	6	7	6	18	2	6	73	8·8	9·59
Scurvy ..	...	...	...	...	...	...	1	1	...	...	...	...	2	·2	...
Rheumatism ...	34	19	26	61	66	40	40	42	36	39	21	21	435	52·4	·50
Venereal Diseases ..	144	131	130	144	100	79	121	113	94	113	86	133	1,388	167·1	
Eye Diseases ...	18	10	9	21	12	14	17	27	21	11	3	4	167	20·1	
Abscess and Ulcer ...	65	57	73	112	96	94	83	73	62	68	68	58	909	109·4	
Wounds and Accidents .	54	75	64	78	56	51	71	40	47	55	44	55	696	83·8	
All other Causes ..	95	65	118	127	113	106	115	117	108	109	79	87	1,237	148·9	
	734	598	931	1,382	1,006	862	999	990	1,066	1,346	864	860	11,638		
	Admitted per 1,000 of the Average Strength in each Month.														
	95·1	77·2	113·5	159·8	116·7	99·4	115·5	114·6	123·8	158·1	105·6	115·1	1401·0		

EUROPEAN TROOPS, 1872

XV.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in SOUTHERN INDIA during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Disease.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	4,260	276	64·8	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	1	...
February ...	4,422	298	67·4	3	...	...	...	...	...	...	..	...	1	1	...	...	...	...	..	1	...	...	...	...	...	...
March ...	5,486	302	55·0	5	...	...	...	1	...	...	..	1	.	1	...	...	...	...	...	2	...	...	...	...	...	...
April ...	5,237	302	57·7	6	...	...	...	1	...	...	...	3	..	1	...	...	...	...	...	...	...	...	...	...	...	1
May ...	5,008	290	57·9	5	...	...	...	...	...	...	...	3	...	2	...	...	...	...	...	...	...	...	...	...	...	...
June ...	4,972	301	60·5	10	...	...	...	2	...	...	1	1	...	1	...	3	...	...	1	1	...	...	...	...	...	...
July ...	4,972	299	60·1	5	...	...	...	3	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
August ...	4,993	315	63·1	5	...	...	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	..	...	...	1	1
September ...	4,989	317	63·5	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	1
October ...	5,049	305	60·4	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	1	1	...
November ...	4,989	291	58·3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
December ...	4,998	281	56·2	13	...	...	...	4	...	...	...	1	...	...	...	3	...	...	2	...	...	...	...	...	2	1
						...	...	12	...	...	1	11	1	6	...	10	...	...	7	6	...	...	...	1	7	5
						Died per 1,000 of the Average Strength.																				
For the year ...	4,949	298	60·2	67	13·54	...	...	2·43	·20			2·22	·20	1·21	...	2·02	...	...	1·42	1·21	...	...	...	·20	1·42	1·01

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	30	1	...	30	77	52	122	58	71	36	3	1	481	97·2	...
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	2	1	4	1	1	...	...	...	...	...	...	...	9	1·8	...
Enteric Fever ...	2	3	6	1	3	2	5	5	...	...	...	13	40	8·1	30·00
Fever, Intermittent ...	26	19	22	14	13	7	15	6	10	11	16	30	189	38·2	...
„ Remittent ...	...	...	...	...	...	1	1	...	...	...	...	2	4	127·7	·16
„ Continued ...	24	40	88	84	71	44	52	24	37	27	38	99	628		
Apoplexy ...	...	1	2	3	6	2	2	1	...	1	...	2	20	4·0	55·00
Delirium Tremens ...	3	8	3	5	2	1	1	...	1	2	2	...	28	5·7	3·57
Dysentery ...	33	16	11	22	22	15	34	33	25	30	13	41	295	59·6	2·03
Diarrhœa ...	32	23	25	26	33	22	38	26	18	12	47	41	343	69·3	...
Hepatitis ...	25	24	20	31	25	27	23	23	27	32	11	30	298	60·2	3·36
Spleen Disease ...	...	5	4	2	1	1	...	...	2	1	...	...	16	3·2	...
Respiratory Diseases ...	21	45	50	49	16	32	30	27	17	32	18	23	360	72·7	...
Phthisis Pulmonalis ...	12	7	6	4	3	5	3	3	2	6	6	13	70	14·1	8·57
Scurvy ...	...	...	...	...	...	...	...	...	...	1	...	...	1	·2	...
Rheumatism ...	24	10	24	25	26	29	32	43	22	25	18	20	298	60·2	·38
Venereal Diseases ...	70	57	86	103	69	54	92	59	63	67	64	73	857	173·2	
Eye Diseases ...	6	9	13	7	5	9	15	9	8	13	7	8	109	22·2	
Abscess and Ulcer ...	53	56	46	68	51	58	67	57	39	75	71	41	682	137·8	
Wounds and Accidents	46	58	58	70	64	57	52	58	37	61	42	45	648	130·9	
All other Causes ...	117	94	116	149	109	124	140	106	79	114	80	116	1,341	271·6	
	526	477	584	694	597	542	724	538	458	546	436	598	6,720		
	Admitted per 1,000 of the Average Strength in each Month.														
	123·5	107·9	106·4	132·5	119·2	109·0	145·6	107·8	91·8	108·1	87·4	119·6	1357·9		

EUROPEAN TROOPS, 1872.

XVI.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in BURMAH and PEGU during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	1,948	54	27·7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
February ...	1,539	58	37·7	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
March ...	1,880	68	36·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	2,055	68	33·1	3	...	...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...
May ...	2,063	85	41·2	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
June ...	2,055	98	47·7	2	...	...	...	...	...	...	...	...	*1	...	...	...	...	...	...	...	...	...	...	...	1	...
July ...	2,035	89	43·7	3	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1
August ...	2,015	76	37·7	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
September ...	1,995	66	33·1	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
October ...	1,996	67	33·6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
November ...	1,997	68	34·1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
December ...	2,385	62	26·0	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
						...	...	...	...	...	...	2	2	2	...	4	...	...	3	...	...	...	...	...		5
						Died per 1,000 of the Average Strength.																				
For the year ...	1,998	72	36·0	21*	10·50	...	...	...		...		1·00	1·00	1·00	...	2·00	...	...	1·50	...	...	...	...	...	1·50	2·50

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
Dengue ...	...	1	...	18	124	111	73	24	30	11	4	1	397	198·7	...
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	1	1	...	...	...	...	...	...	...	...	...	...	2	1·0	...
Fever, Intermittent ...	8	7	8	3	6	10	17	5	2	4	1	6	83	41·5	...
„ Remittent ...	...	...	...	...	...	...	...	...	...	...	...	1	1	24·0	
„ Continued ...	8	3	2	2	...	5	4	...	3	4	4	12	47		...
Apoplexy ...	...	...	...	1	...	...	...	1	...	...	...	...	2	1·0	100·00
Delirium Tremens ...	...	...	...	1	1	1	...	...	1	...	1	...	5	2·5	40·00
Dysentery ...	10	8	9	4	11	17	23	17	8	14	9	5	135	67·6	1·48
Diarrhœa ...	1	3	...	2	6	8	9	10	5	4	8	16	67	33·5	...
Hepatitis ...	14	8	10	5	5	8	17	15	17	12	13	10	134	67·1	3·00
Spleen Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Respiratory Diseases ...	10	4	5	5	4	6	3	3	5	6	4	15	70	35·0	...
Phthisis Pulmonalis ...	...	1	...	1	...	...	3	...	...	...	1	...	6	3·0	...
Scurvy ...	...	1	3	...	...	...	...	...	...	...	...	1	5	2·5	...
Rheumatism ...	6	3	6	6	3	3	8	2	1	8	4	5	55	27·5	·64
Venereal Diseases ...	18	28	20	36	14	9	16	15	10	17	22	24	235	117·6	
Eye Diseases ...	1	...	2	2	...	3	2	2	3	1	2	3	21	10·5	
Abscess and Ulcer ...	8	12	11	17	22	19	18	16	11	11	13	12	170	85·1	
Wounds and Accidents...	13	16	14	17	17	13	12	15	10	6	5	18	156	78·1	
All other Causes ...	11	19	12	33	22	37	39	15	20	29	30	35	302	151·2	
	109	115	102	153	235	256	244	140	132	127	116	164	1,893		
	Admitted per 1,000 of the Average Strength in each Month.														
	56·0	74·7	54·3	74·5	113·9	124·6	119·9	69·5	66·2	63·6	58·1	68·8	947·4		

---

* Besides these 21 deaths, 10 deaths occurred in Depôt Hospitals among men invalided from Burmah. The ratio for 31 deaths is 15·52 per 1,000.

EUROPEAN TROOPS, 1872.

XVII.

TABLE showing the SICKNESS and MORTALITY among the EUROPEAN SOLDIERS occupying the HILL STATIONS and HILL CONVALESCENT DEPOTS of the MADRAS and BOMBAY PRESIDENCIES during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

(The Statistics of Wellington, Ramandroog, Puchmurree, Poorundhur, Taraghur and Mount Aboo are aggregated in this Statement.)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	359	25	69·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
February ...	309	17	55·0	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
March ...	608	17	28·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	852	40	47·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	1,070	70	65·4	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
June ...	853	52	61·0	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
July ...	795	53	66·7	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...
August ...	775	46	59·4	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
September ...	747	41	54·9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October ...	755	46	60·9	3	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
November ...	600	44	73·3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
December ...	496	38	76·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
						1	...	2	...	...	...	2	...	...	...	2	...	...	1	1	...	...	...	1	2	...
						Died per 1,000 of the Average Strength.																				
For the year ...	685	41	59·9	12	17·52	1·46	...	2·92	...			2·92	...	...	...	2·92	...	...	1·46	1·46	...	...	...	1·46	2·92	...

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera ...	...	...	...	...	...	...	...	...	...	1	...	...	1	1·5	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	...	...	...	...	...	1	...	...	...	1	...	...	2	2·9	100·00
Fever, Intermittent ...	48	11	14	47	57	36	76	29	29	72	71	66	556	811·7	...
„ Remittent ...	...	...	...	1	...	...	...	...	3	...	1	...	5	36·5	
„ Continued ...	...	...	...	1	2	8	1	3	1	3	...	1	20		
Apoplexy ...	...	...	1	...	...	...	...	1	...	...	...	...	2	2·9	100·00
Delirium Tremens ...	...	...	...	...	1	...	1	...	...	...	...	...	2	2·9	...
Dysentery ...	...	...	2	4	7	2	4	2	2	2	1	...	26	38·0	...
Diarrhœa ...	5	2	1	7	7	5	9	4	4	5	2	3	54	78·8	...
Hepatitis ...	4	...	2	4	4	4	5	3	1	4	4	1	36	52·6	5·56
Spleen Disease ...	...	...	...	...	...	...	...	...	...	...	...	1	1	1·5	...
Respiratory Diseases ...	1	3	6	9	8	7	4	2	2	2	1	2	47	68·6	...
Phthisis Pulmonalis ...	...	...	...	...	1	1	...	1	...	...	2	...	5	7·3	20·00
Scurvy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism ...	4	3	10	6	6	5	3	4	2	3	4	5	55	80·3	·85
Venereal Diseases ...	...	2	8	25	8	10	22	4	9	12	2	5	107	156·2	
Eye Diseases ...	...	...	3	1	1	2	1	2	1	1	1	...	13	19·0	
Abscess and Ulcer ...	1	3	5	13	7	10	6	2	6	7	...	4	64	93·4	
Wounds and Accidents ...	2	2	3	7	2	4	5	5	3	4	1	2	40	58·4	
All other Causes ...	7	4	4	14	43	21	32	16	11	17	8	16	193	281·7	
	72	30	59	139	154	116	169	78	74	134	98	106	1,229		
	Admitted per 1,000 of the Average Strength in each Month.														
	200·6	97·1	97·0	163·1	143·9	136·0	212·6	100·6	99·1	177·5	163·3	213·7	1794·2		

EUROPEAN TROOPS, 1872.

XVIII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the various PROVINCES of the BENGAL PRESIDENCY during the Year 1872.

	Ratios per 1,000 of Strength.						
	Bengal Proper.	Gangetic Provinces.	Rohilcund and Meerut.	Agra and Central India.	Punjab.	Hill Stations	Army of Bengal.
1.—Average Daily Sick-rate of each Month.							
January ...	61·6	54·1	50·2	57·2	48·1	44·4	50·7
February ...	62·2	52·1	44·6	54·4	49·8	40·2	47·9
March ...	55·5	47·1	46·0	49·4	45·1	46·0	47·0
April ...	60·8	50·6	49·5	43·4	44·1	39·1	49·1
May ...	74·0	54·8	50·2	47·6	50·7	45·0	55·9
June ...	71·2	59·3	56·9	46·6	56·5	44·9	58·2
July ...	71·7	60·8	55·3	46·3	54·4	49·0	58·2
August ...	74·6	69·2	64·3	53·8	61·4	44·0	63·8
September ...	72·9	74·1	76·6	70·4	70·3	42·1	70·2
October ...	61·9	71·7	76·0	66·0	73·1	40·0	69·1
November ...	53·9	59·4	52·5	51·4	71·8	37·3	59·3
December ...	56·5	50·9	52·1	41·1	58·9	33·5	52·3
Average of the Year ...	64·8	58·8	56·6	53·2	56·8	42·9	56·8
2.—Composition of the Admission-rate of the Year.							
Dengue ...	344·5	296·2	110·2	89·5	6·7	...	110·8
Cholera ...	1·5	17·7	17·5	7·0	19·3	10·4	16·0
Smallpox ...	...	·7	·5	...	1·4	...	·7
Enteric Fever ...	1·0	3·4	2·9	·7	3·9	2·1	2·9
Intermittent Fevers ...	174·8	146·8	405·2	534·3	427·5	73·4	316·4
Remittent and Continued Fevers ...	259·4	107·0	123·1	115·8	320·7	41·7	180·5
Apoplexy ...	6·1	5·2	7·8	3·6	4·4	·3	4·3
Delirium Tremens ...	2·0	2·7	6·6	4·0	5·0	2·4	4·0
Dysentery ...	62·3	38·8	49·0	23·5	32·2	22·2	35·0
Diarrhœa ...	62·3	79·8	81·3	47·2	75·8	88·5	77·5
Hepatitis ...	104·4	57·2	55·3	36·8	53·6	31·1	56·0
Spleen Disease ...	7·1	4·0	12·6	7·6	6·7	2·6	6·5
Respiratory Diseases ...	72·4	53·6	102·5	64·5	83·8	72·8	75·6
Phthisis Pulmonalis ...	24·3	9·8	5·6	9·5	8·5	5·4	9·5
Scurvy ...	·5	...	1·2	·7	·4	·9	·5
Rheumatism ...	63·3	59·5	88·6	73·1	59·1	65·4	64·0
Venereal Diseases ...	187·9	229·4	162·4	157·4	183·9	161·3	190·7
Eye Diseases ...	13·7	39·1	20·2	19·0	24·8	10·0	24·4
Abscess and Ulcer ...	78·0	99·3	93·2	63·6	77·3	50·0	80·2
Wounds and Accidents ...	124·1	79·9	84·0	68·6	93·8	84·6	86·0
All other Causes ...	237·6	175·7	192·8	132·7	178·7	121·6	174·6
Admission-rate of the Year ...	1827·2	1505·8	1622·5	1460·0	1667·5	846·7	1514·1
3.—Composition of the Death-rate of the Year.							
Cholera ...	1·01	11·15	11·90	4·75	13·86	6·22	10·66
Smallpox ...	...	·24	..	...	·41	...	·19
Enteric Fever ...	..	1·21	1·70	·24	2·72	2·37	1·62
Remittent and Continued Fevers ...	2·53	1·58	2·67	·71	2·23	·59	1·78
Apoplexy ...	1·52	1·82	1·21	1·41	2·06	...	1·59
Delirium Tremens ...	...	...	·97	...	·08	...	·14
Dysentery .	1·01	1·33	2·43	·71	1·90	2·96	1.75
Diarrhœa ...	·51	·24	·97	...	·08	·50	·27
Hepatitis ...	2·53	2·67	2·07	2·38	1·82	·59	2·36
Spleen Disease ...	...	...	...	...	·08	...	·03
Respiratory Diseases ...	1·52	·60	2·67	·71	1·40	·59	1·32
Heart Diseases ...	2·03	·97	.97	1·19	1·40	·30	1·12
Phthisis Pulmonalis ...	1·52	·73	1·21	1·19	1·00	·30	·98
Injuries ..	...	...	·24	...	·17	...	·11
All other Causes ...	1·52	1·58	8·40	1·19	1·24	2·96	1·89
Deaths from violence out of hospital ...	2·53	1·69	·79	·95	1·98	·59	1·64
Death-rate of the Year ...	18·23	25·81	33·98	15·43	32·43	18·06	27·45
	Died out of each hundred cases treated.						
4.—Mortality relative to the number treated.							
Cholera ...	66·67	63·01	68·06	60·60	71·80	60·00	66·61
Enteric Fever ...	...	35·72	58·33	33·33	70·21	100·00	57·28*
Remittent and Continued Fevers ...	·98	1·48	2·17	·20	·66	·71	·98
Apoplexy ...	25·00	34·88	15·63	40·00	47·17	...	36·94
Delirium Tremens ..	...	...	14·82	...	1·64	...	3·40
Dysentery ..	1·63	3·44	4·95	3·01	5·90	13·33	5·02
Hepatitis ..	2·43	4·06	4·83	6·45	3·38	1·90	4·21
Respiratory Diseases ..	2·10	1·18	2·37	1·10	1·67	·81	1·70
Phthisis Pulmonalis ...	6·25	7·41	21·74	12·50	11·65	5·55	10·37

* The Death-rate for Enteric Fever is exaggerated in consequence, in many instances, of fatal cases only being recognised and recorded.

EUROPEAN TROOPS, 1872.

XIX.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the EUROPEAN TROOPS serving in the various PROVINCES of the BOMBAY and MADRAS PRESIDENCIES during the Year 1872.

	RATIOS PER 1,000 OF STRENGTH.						
	Rajpootana, Malwa, Scinde, and Aden.	Deccan and Nagpore.	Southern India.	Burmah and Pegu.	ARMY OF MADRAS.	ARMY OF BOMBAY.	ARMY OF INDIA.
I.—AVERAGE DAILY SICK-RATE OF EACH MONTH.							
January ...	52·1	52·7	64·8	27·7	57·3	40·3	51·7
February ...	48·3	48·4	67·4	37·7	61·1	41·2	49·8
March ...	41·9	45·5	55·0	38·2	53·3	43·0	47·5
April ...	41·8	53·9	57·7	33·1	53·3	47·4	49·6
May ...	41·2	54·3	57·9	41·2	58·5	45·4	51·4
June ...	42·8	54·2	60·5	47·7	60·9	45·5	50·4
July ...	49·4	48·4	60·1	43·7	59·4	46·3	56·2
August ...	54·1	57·7	63·1	37·7	66·1	49·8	61·6
September ...	67·1	64·2	68·6	33·1	70·2	56·8	67·7
October ...	74·4	61·3	60·4	33·6	66·4	60·7	67·0
November ...	71·2	55·8	58·3	34·1	56·4	60·1	58·9
December ...	68·2	56·9	56·2	26·0	52·1	54·0	53·5
AVERAGE OF THE YEAR ...	54·4	54·5	60·2	36·0	59·5	50·3	56·2
II.—COMPOSITION OF THE ADMISSION-RATE OF THE YEAR.							
Dengue ...	224·1	143·3	97·2	198·7	82·8	220·7	127·2
Cholera ...	6·1	1·6	...	...	·4	4·3	10·7
Smallpox ...	·2	2·3	1·8	...	1·4	1·2	·9
Enteric Fever ...	4·1	6·1	8·1	1·0	6·8	3·7	3·8
Intermittent Fevers ...	698·7	241·6	38·2	41·5	132·3	502·0	313·2
Remittent and Continued Fevers ..	113·7	152·8	127·7	24·0	135·4	109·2	158·5
Apoplexy ...	7·5	4·5	4·0	1·0	4·8	5·1	4·5
Delirium Tremens ...	6·6	2·8	5·7	2·5	4·7	4·1	4·2
Dysentery ...	30·8	76·2	59·6	67·6	85·1	34·6	44·7
Diarrhœa ...	69·1	79·6	69·3	33·5	76·9	63·9	74·9
Hepatitis ...	37·6	35·9	60·2	67·1	59·3	34·9	52·8
Spleen Disease ...	3·6	2·5	3·2	...	2·0	4·0	5·1
Respiratory Diseases ...	42·8	61·1	72·7	35·0	64·8	48·5	68·5
Phthisis Pulmonalis ...	8·6	8·8	14·1	8·0	11·3	9·5	9·9
Scurvy ...	·4	·2	·2	2·5	·6	·4	·5
Rheumatism ...	38·8	52·4	60·2	27·5	49·8	51·1	58·8
Venereal Diseases ...	152·9	167·1	173·2	117·6	164·8	154·8	170·0
Eye Diseases ...	17·6	20·1	22·2	10·5	19·3	18·1	22·3
Abscess and Ulcer ...	96·0	109·4	137·8	85·1	123·6	92·4	91·0
Wounds and Accidents ...	83·8	83·8	130·9	78·1	102·9	81·1	87·8
All other Causes ...	142·7	148·9	271·6	151·2	228·6	135·9	178·1
ADMISSION-RATE OF THE YEAR ...	1785·5	1401·0	1357·9	947·4	1357·4	1588·5	1497·0
III.—COMPOSITION OF THE DEATH-RATE OF THE YEAR.							
Cholera ...	4·83	1·20	...	...	·17	3·33	7·25
Smallpox ...	...	·48	...	...	·17	·10	·19
Enteric Fever ...	2·86	2·53	2·43	...	2·34	2·22	1·87
Remittent and Continued Fevers ...	1·07	1·08	·20	...	·69	·74	1·38
Apoplexy ...	3·94	1·93	2·22	1·00	2·43	2·59	1·93
Delirium Tremens ...	·18	·24	·20	1·00	·35	·10	·10
Dysentery ...	·89	3·25	1·21	1·00	2·77	1·20	1·85
Diarrhœa ...	...	...	...	...	...	...	·17
Hepatitis ...	2·15	2·65	2·02	2·00	3·20	1·85	2·45
Spleen Disease ...	...	...	...	...	...	...	·02
Respiratory Diseases ...	·80	·24	...	...	·09	·65	·95
Heart Diseases ...	·72	1·57	1·42	1·50	2·08	·92	1·28
Phthisis Pulmonalis ...	2·15	·84	1·21	...	1·65	·166	1·24
Injuries ...	...	...	·20	...	·09	·09	·10
All other Causes ...	1·79	1·32	1·42	1·50	1·73	1·66	1·81
Deaths from violence out of hospital ...	2·51	·48	1·01	2·50	1·13	1·57	1·53
DEATH-RATE OF THE YEAR ...	23·98	17·81	13·54	10·50	18·98	18·86	24·21
	DIED OUT OF EACH HUNDRED CASES TREATED.						
IV.—MORTALITY RELATIVE TO THE NUMBER TREATED.							
Cholera ...	75·00	70·92	...	...	50·00	78·26	67·35
Enteric Fever ...	69·56	41·18	30·00	...	34·62	60·00	40·77*
Remittent and Continued Fevers ...	·63	·71	·16	...	·51	·51	·80
Apoplexy ...	52·38	43·24	55·00	100·00	50·00	50·91	42·54
Delirium Tremens ...	2·70	8·70	3·57	40·00	7·41	4·55	4·49
Dysentery ...	2·92	4·27	2·03	1·48	3·26	3·48	4·14
Hepatitis ...	5·71	7·38	3·36	3·00	5·55	5·29	4·64
Respiratory Diseases ...	2·09	·39	...	...	·13	1·34	1·36
Phthisis Pulmonalis ...	25·00	9·59	8·57	..	14·62	17·48	12·59

* The Death-rate for Enteric Fever is exaggerated in consequence, in many instances, of fatal cases only being recognised and recorded.

EUROPEAN TROOPS, 1872.

XX.

TABLE showing the GENERAL STATISTICS of SICKNESS and MORTALITY in the PRINCIPAL MILITARY STATIONS of the THREE PRESIDENCIES.

STATIONS.	Period of Observation.	Average Strength during the period of occupation.	Daily Sick per 1,000 of the Average Strength in each Month.												Average Daily Sick per 1,000 of Strength for the period of occupation.	Admission-rate per 1,000 of Strength for the period of occupation.	Died per 1,000 of the Average Strength.			
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A.	B. All other Causes.		C.
																	Cholera.	1. In Hospital.	2. Out of Hospital.	All Causes.
Bengal Proper.																				
Fort William ...	For the Year ...	828	90·6	95·1	80·2	82·3	81·4	96·1	101·0	103·4	103·8	80·4	90·5	90·0	90·6	1980·7	1·21	10·86	2·42	14·49
Dum-Dum ...	” ...	702	45·1	38·0	24·0	39·8	52·4	36·7	38·6	45·0	40·6	48·6	30·3	32·9	38·5	1403·1	...	17·09	2·85	19·94
Barrackpore ...	” ...	444	43·6	45·2	52·6	46·6	92·3	73·7	60·7	60·0	58·0	43·9	57·0	52·9	56·3	2211·7	2·25	18·02	2·25	22·52
Gangetic Provinces.																				
Hazareebaugh ...	” ...	879	56·6	55·9	51·9	45·3	42·0	45·5	43·2	43·2	48·9	42·1	37·6	31·9	45·5	1118·3	...	6·83	...	6·83
Dinapore ...	” ...	829	57·1	66·0	55·1	55·0	77·5	84·7	102·3	120·7	88·2	77·6	54·6	51·7	74·8	1875·7	2·41	16·89	2·41	21·71
Benares ...	” ...	493	38·8	60·5	50·2	56·9	61·1	61·1	57·3	65·4	79·9	81·8	60·8	49·1	60·9	1466·5	4·06	6·09	6·08	16·23
Chunar ...	” ...	66	15·2	30·3	15·2	30·3	15·2	15·2	30·3	45·5	79·4	29·4	45·5	60·6	30·3	1575·8	...	15·15	...	15·15
Fyzabad ...	” ...	968	47·0	34·8	38·1	49·4	64·9	66·0	52·8	51·8	35·7	43·6	57·5	51·7	49·7	959·7	21·74	15·53	...	37·27
Lucknow ...	” ...	2,426	52·4	46·0	42·3	45·1	49·6	58·6	56·4	57·4	65·8	69·8	60·0	46·1	54·0	1496·3	10·31	11·13	2·47	23·91
Seetapore ...	” ...	608	26·1	27·4	25·7	35·6	46·8	45·4	56·9	65·1	68·5	49·0	29·7	30·9	42·8	901·3	...	11·51	...	11·51
Futtehghur ...	8 Months, March to October ...	215	...	...	9·3	27·9	41·9	37·2	41·9	37·2	65·4	51·4	...	...	37·2	1018·6	...	4·65	...	4·65
Cawnpore ...	For the Year ...	856	84·6	78·4	72·0	77·2	63·0	77·5	88·5	87·6	147·0	152·6	90·5	76·5	92·3	2412·4	19·86	18·70	3·50	42·06
Allahabad ...	” ...	985	76·5	73·6	49·6	49·8	50·1	44·4	46·5	92·1	76·1	63·9	72·7	64·9	62·9	1666·0	25·38	17·26	...	42·64
Rohilcund and Meerut.																				
Shahjehanpore ...	” ...	380	38·1	32·7	33·2	30·5	41·2	50·0	61·1	69·8	72·8	72·4	56·4	52·1	50·0	900·0	...	10·53	2·63	13·16
Bareilly ...	” ...	758	63·7	51·5	34·4	38·9	40·4	46·9	48·1	46·9	53·4	49·5	30·3	45·7	44·9	1166·2	...	7·92	1·32	9·24
Moradabad ...	” ...	205	26·8	37·0	35·7	31·2	32·9	37·6	32·9	42·3	46·9	37·7	33·2	33·3	34·1	848·8	...	4·88	...	4·88
Roorkee ...	” ...	432	14·9	32·5	58·7	40·8	53·0	55·4	72·8	53·9	41·9	50·1	36·6	29·7	44·0	1395·8	4·63	20·83	...	25·46
Meerut ...	” ...	1,141	42·6	41·6	51·6	59·3	71·9	73·5	66·7	84·9	98·7	91·4	64·9	65·5	66·6	1972·9	32·62	36·08	...	68·70
Delhi ...	” ...	543	123·9	59·8	42·4	62·7	72·2	61·6	52·3	69·6	122·1	113·9	69·3	63·6	73·7	2401·4	...	20·26	3·68	23·94
Muttra ...	10 Months, January to October ...	432	82·2	49·3	57·0	51·3	42·0	28·0	25·7	37·5	40·0	73·1	...	...	48·6	1233·8	...	9·26	...	9·26
Agra and Central India.																				
Agra ...	For the Year ...	1,156	57·1	54·7	48·2	42·8	43·7	44·2	41·7	45·4	63·3	57·1	34·7	26·4	46·7	1222·3	15·57	10·39	·96	26·92
Morar ...	” ...	1,076	62·2	56·5	61·0	50·2	49·5	59·5	51·6	58·2	72·2	58·3	61·2	47·3	56·7	1489·8	...	11·15	·93	12·08
Gwalior Citadel ...	” ...	355	53·4	68·4	64·6	64·1	72·0	58·3	64·1	72·6	76·1	73·4	48·2	52·1	62·0	1228·1	...	2·82	2·82	5·64
Jhansi ...	” ...	401	48·7	32·8	30·0	30·8	35·7	48·6	43·5	46·2	82·3	97·9	82·0	52·6	52·4	2058·3	...	12·47	...	12·47
Nowgong ...	” ...	315	73·2	80·2	66·7	66·7	76·2	67·3	61·1	64·7	84·7	63·9	49·4	46·7	66·7	1755·5	6·35	15·88	3·17	25·40
Saugor ...	” ...	456	51·3	52·4	33·2	18·8	39·8	44·5	53·9	77·3	86·7	94·1	65·3	47·5	54·8	1559·2	...	6·58	...	6·58
Jubbulpore ...	9 Months, April to December ...	549	...	...	...	34·4	36·2	27·1	21·7	29·0	49·1	49·6	42·9	38·4	36·4	579·2	...	5·47	...	5·47
Punjab.																				
Umballa ...	For the Year ...	1,390	28·0	29·5	29·9	49·1	48·4	43·6	38·0	51·1	65·2	62·2	64·8	36·9	44·2	1319·6	...	15·94	5·80	21·74
Phillour ...	6 Months, April to September ...	66	...	...	...	...	15·6	46·9	46·9	98·4	...	...	...	...	71·4	1285·7	171·88	62·50	...	234·38
Jullundur ...	For the Year ...	800	43·7	56·1	43·1	39·4	56·7	55·0	53·7	74·0	81·5	71·8	60·3	66·1	57·5	1002·5	7·50	20·00	1·25	28·75
Ferozepore ...	” ...	1,118	39·6	44·1	36·1	35·0	36·9	37·9	36·1	50·6	62·3	51·7	44·8	30·3	42·0	1165·5	...	12·52	...	12·52
Mooltan ...	” ...	831	39·6	36·2	46·6	55·6	71·7	92·8	103·2	96·0	84·8	87·0	102·5	77·5	73·4	1517·4	2·41	14·43	2·41	19·25
Dera Ismael Khan ...	” ...	99	30·0	20·0	30·0	30·0	50·0	60·6	60·6	90·9	90·9	121·2	191·9	222·2	80·8	2343·4	...	20·20	...	20·20
Sealkote ...	” ...	1,119	54·8	52·7	48·3	54·4	49·0	61·7	52·8	55·7	65·9	65·3	64·6	80·6	57·2	1471·9	3·57	12·51	1·79	17·87
Umritsur ...	” ...	273	29·1	24·2	29·4	10·1	33·6	37·3	37·3	44·1	51·4	44·5	41·0	36·5	36·6	1450·6	...	18·32	...	18·32
Fort Lahore ...	” ...	82	48·2	11·9	12·0	34·9	46·5	46·0	60·2	108·1	100·0	89·9	119·0	12·0	61·0	2487·8	85·37	36·58	...	121·95
Meean Meer ...	” ...	1,013	65·0	57·5	68·1	72·2	76·5	89·6	90·4	97·6	92·7	170·8	171·2	98·3	93·8	2498·5	86·87	28·63	...	115·50
Rawulpindee ...	” ...	1,783	56·2	53·5	58·3	40·1	47·1	58·2	53·4	45·3	45·9	36·9	40·3	44·6	48·2	1157·6	1·68	16·83	2·80	21·31
Campbellpore ...	” ...	135	40·3	48·8	41·3	35·7	29·0	36·5	29·4	59·3	53·0	63·8	96·8	49·0	51·9	2177·8	...	14·81	...	14·81
Attock ...	” ...	180	47·6	41·9	57·6	54·6	84·3	62·1	40·0	73·9	101·7	106·1	93·9	124·2	72·2	2477·8	16·67	11·11	...	27·78
Nowshera ...	” ...	693	57·5	61·1	35·3	35·7	54·3	61·9	65·2	54·8	60·2	82·3	107·1	73·5	62·0	2434·3	...	7·21	2·89	10·10
Peshawur ...	” ...	1,570	62·3	67·8	54·3	43·7	46·0	53·4	53·0	60·3	92·5	99·7	107·9	102·0	69·4	2877·7	21·53	15·65	1·47	38·65
Cherat ...	7 Months, May to November ...	760	...	...	..	16·5	33·5	26·7	36·9	39·7	41·7	36·2	16·0	...	32·9	565·8				

HILL STATIONS.																				
Darjeeling ...	For the Year ...	85	29·4	23·5	23·3	34·5	34·5	46·0	23·0	34·5	46·0	34·5	46·0	46·0	35·3	920·4	...	...	...	...
Raneekhet ...	" ...	479	75·2	54·8	58·3	44·8	54·3	76·6	78·8	83·7	88·7	84·7	63·5	53·3	68·9	1194·2	...	37·58	...	37·58
Chuckrata ...	10 Months, March to December...	854	...	...	42·2	42·4	43·6	47·0	44·8	32·5	35·9	28·1	30·2	25·6	37·3	469·5	1·13	6·79	...	7·92
Dugshaie ...	10 Months, January to October ...	940	32·6	41·4	53·0	40·0	39·8	44·5	37·7	36·1	19·7	34·5	...	...	38·3	694·7	21·28	6·38	...	27·66
Subathoo ...	10 Months, January to October ...	900	33·7	28·7	37·5	35·3	47·5	29·9	68·4	51·0	48·7	35·4	...	...	41·1	727·8	...	6·67	1·11	7·78
Jutogh ...	9 Months, April to December ...	95	...	...	...	40·8	40·8	50·5	30·6	20·8	31·3	21·7	11·1	...	31·6	389·5	...	...	...	...
Kangra ...	5 Months, August to December	34	...	...	...	...	...	...	...	...	...	...	...	...	......	......	} ...			
Dhurmsalla ...	8 Months, April to November ...	88	...	...	...	18·2	19·2	18·2	27·3	25·0	50·0	37·5	37·5	...	34·1	352·3		...	...	...
Murree Hills ...	5 Months, May to September ...	668	...	...	...	...	51·1	43·3	41·8	43·3	42·0	...	...	...	44·9	444·6	...	2·99	1·50	4·49
CONVALESCENT DEPÔTS.																				
Darjeeling ...	9 Months, April to December ...	105	...	...	...	122·6	94·3	94·3	56·6	57·1	76·9	57·7	47·6	47·6	76·2	1276·2	...	9·52	9·52	19·05
Nynee Tal ...	9 Months, January, and from May to December.	241	100·5	...	...	...	136·6	124·0	144·0	124·5	136·2	105·1	119·8	110·6	124·5	1261·4	...	8·30	4·15	12·45
Landour ...	7 Months, April to October ...	205	...	...	...	78·0	86·1	72·1	62·2	71·8	81·7	49·2	...	...	73·2	912·2	...	19·51	...	19·51
Kussowlie ...	7 Months, April to October ...	656	...	...	...	95·7	108·3	111·4	101·7	121·4	117·7	93·2	...	...	106·7	1298·8	19·82	27·44	...	47·26
Dalhousie ...	7 Months, April to October ...	502	...	...	...	77·8	121·5	103·6	91·5	65·7	73·9	99·8	...	...	93·6	858·6	...	7·97	...	7·97
Murree ...	7 Months, May to November ...	526	...	...	...	...	87·4	77·2	97·3	92·9	63·2	76·2	64·7	...	79·8	884·0	43·73	3·80	...	47·53
RAJPOOTANA, MALWA, SCINDE, AND ADEN.																				
Nusseerabad ...	For the Year ...	646	58·3	68·5	52·3	56·8	59·7	61·4	48·0	63·0	95·0	91·7	75·6	77·8	60·6	2227·5	...	21·67	...	21·67
Neemuch ...	" ...	468	57·8	66·7	54·7	50·4	29·4	21·1	21·3	36·6	30·6	84·1	73·3	44·7	47·0	1279·9	44·87	10·68	...	55·55
Indore ...	" ...	96	46·9	31·2	34·5	53·8	54·3	35·4	22·7	41·7	72·7	70·2	71·4	79·6	52·1	989·6	31·25	10·42	...	41·67
Mhow ...	" ...	1,432	64·1	62·9	57·2	52·4	49·9	41·2	48·7	59·4	90·8	79·3	48·0	39·7	58·7	1507·0	2·09	10·47	·70	13·26
Deesa ...	" ...	897	38·7	27·8	37·7	39·0	26·7	44·3	91·5	63·5	66·9	124·5	139·1	91·8	66·9	2474·9	...	25·64	1·12	26·76
Ahmedabad and Baroda ...	[illegible] ...	166	77·3	79·2	29·4	28·2	33·7	69·0	59·2	64·7	53·3	52·3	67·5	67·5	54·2	2602·4	...	18·07	6·03	24·10
Kurrachee and Ghizree ...	" ...	802	47·0	35·8	25·9	26·7	28·0	30·2	31·7	44·0	47·7	40·5	48·9	49·6	38·7	1680·8	...	17·45	1·25	18·70
Hyderabad ...	" ...	377	34·0	29·6	35·2	36·5	34·1	34·8	37·2	56·8	56·2	63·9	115·8	102·0	55·7	1551·5	...	15·92	10·61	26·53
Aden ...	" ...	703	41·4	33·1	17·2	24·0	49·6	56·9	44·2	41·5	46·0	27·3	20·2	47·0	37·0	1426·7	...	17·07	8·53	25·60
DECCAN AND NAGPORE.																				
Bombay ...	" ...	443	37·7	34·9	37·0	51·4	77·3	70·7	62·2	51·0	41·4	55·2	60·1	72·9	54·2	1875·9	...	22·57	...	22·57
Asseerghur ..	10 Months, January to October ...	130	46·2	38·6	46·2	30·8	38·5	53·8	38·5	61·5	61·5	76·9	...	...	46·2	1438·5	...	7·69	...	7·69
Ahmednuggur ...	For the Year ...	592	61·5	53·1	45·8	43·8	29·1	48·3	44·3	47·7	45·0	44·7	50·7	44·8	47·3	885·2	1·69	15·20	...	16·89
Poona and Kirkee ...	" ...	2,305	51·5	39·5	45·1	69·9	56·1	46·7	41·1	50·0	44·2	38·5	40·9	46·5	47·7	1[illegible]7·2	3·03	8·24	·43	11·70
Sattara ...	10 Months, January to October ...	209	9·5	4·7	19·0	42·9	14·4	19·1	14·4	19·2	62·5	57·7	...	...	23·9	526·3	...	4·78	4·78	9·57
Belgaum ...	For the Year ...	1,037	35·5	32·2	36·0	29·1	35·7	36·7	33·0	29·2	34·0	36·8	43·6	34·5	34·7	677·9	...	5·78	...	5·78
Secunderabad ...	" ...	2,586	60·3	56·7	49·5	49·3	55·3	58·0	61·0	78·6	59·5	80·9	71·8	78·5	65·4	1340·2	·39	25·91	·77	27·07
Kamptee ...	" ...	1,040	58·5	64·4	55·8	66·6	82·1	83·7	53·9	67·8	99·4	103·0	71·6	51·3	71·2	2065·4	·96	20·19	...	21·15
SOUTHERN INDIA.																				
Bellary ...	10 Months, March to December...	942	...	...	42·2	52·8	45·7	43·6	50·9	59·5	59·3	60·9	77·0	71·6	56·3	1031·8	...	5·31	...	5·31
Bangalore ...	For the Year ...	1,754	60·1	64·2	58·4	54·0	49·6	58·5	57·8	54·0	53·3	53·0	53·7	54·2	55·9	1239·4	...	14·24	1·15	15·39
Cannanore ..	" ...	747	56·9	81·3	50·8	41·5	35·5	45·3	56·9	55·2	53·5	64·9	45·9	53·3	56·2	1255·7	...	13·39	...	13·39
Malliapoorum ...	" ..	96	10·0	20·2	10·1	20·2	50·5	30·3	70·7	70·0	50·5	30·3	12·7	50·6	31·3	770·8	...	10·41	10·41	20·83
Calicut ...	" ...	86	32·6	34·5	22·2	45·5	45·5	56·8	46·0	34·5	37·0	35·7	38·0	25·6	34·9	848·8	...	11·63	...	11·63
Trichinopoly ...	" ...	311	66·0	66·5	55·9	62·9	63·3	72·8	76·7	79·9	67·1	74·2	69·4	64·1	70·7	1290·0	...	12·86	3·22	16·08
St. Thomas' Mount ...	" ...	401	58·5	66·4	59·7	62·1	98·8	72·8	45·9	48·8	75·1	109·2	57·2	55·2	69·8	1431·4	...	19·95	...	19·95
Madras ...	" .	742	54·9	61·9	76·2	89·6	96·9	95·4	81·5	103·6	96·0	49·0	55·9	45·9	74·1	1996·5	...	10·78	1·35	12·13
BURMAH AND PEGU.																				
Rangoon ...	" ...	651	36·8	43·6	40·8	33·5	40·9	47·2	41·9	45·5	33·7	36·2	43·0	29·0	35·6	1015·2	...	8·20	4·68	12·88
Toungoo ...	" ...	465	17·9	51·1	43·3	39·8	41·8	45·7	44·2	41·2	37·8	33·9	34·2	28·5	38·7	1044·3	...	12·90	2·15	15·05
Thayetmyo ...	...	569	22·1	24·6	25·0	30·9	43·7	48·8	47·2	18·9	29·3	34·3	26·0	24·3	31·6	880·5	...	5·27	...	5·27
Port Blair ...	" ...	110	27·8	18·5	18·2	9·1	27·3	54·5	36·4	54·5	18·2	9·1	...	..	27·3	527·2	...	...	...	...
HILL STATIONS AND DEPÔTS.																				
Taraghur (Ajmere) ...	8 Months, April to November ...	41	...	...	...	...	...	...	...	...	...	...	...	...	......	......	23·25	69·77	...	93·02
Mount Aboo ...	For the Year ...	148	37·0	74·1	25·2	42·3	55·2	64·7	68·4	59·8	71·4	110·0	153·8	81·1	60·8	2831·0	...	20·27	...	20·27
Poorundhur ...	" ...	64	104·8	61·9	26·3	40·0	33·3	60·6	...	...	[illegible]0·0	90·9	52·6	27·8	62·5	1453·1	...	...	...	...
Puchmurree (Madras Troops) ...	10 Months, March to December...	151	..	...	26·7	100·0	106·7	67·1	114·1	94·0	73·8	64·9	51·9	39·0	72·8	1508·0	...	13·24	...	13·24
Ramandroog ...	6 Months, April to September ...	41	...	...	...	...	...	...	...	...	...	...	...	...	.. ..	......	...	...	...	...
Wellington ...	For the Year ...	283	62·1	41·0	35·5	25·3	51·6	46·7	44·4	45·9	38·0	31·0	57·4	109·9	47·8	1194·5	...	10·24	...	10·24

EUROPEAN TROOPS, 1872.

XXI.

TABLE showing the RATIO in which the PRINCIPAL DISEASES have contributed to make up the ADMISSION-RATE of the YEAR in the CHIEF MILITARY STATIONS of the THREE PRESIDENCIES.

STATIONS.		Average Strength during the period of occupation.	Admitted into Hospital per 1,000 of Average Strength.												Admitted per 1,000 o the Averag Strength from all Causes.
			Dengue.	Cholera.	Heat Apoplexy.	Fevers.	Dysentery.	Diarrhœa.	Hepatitis.	Rheumatism.	Venereal Diseases.	Diseases of the Respiratory Organs.	Ophthalmia.	All other causes.	
Bengal Proper.															
Fort William	...	828	204·7	2·4	2·4	545·9	71·3	26·6	120·2	73·7	285·0	62·8	9·7	477·0	1980·7
Dum-Dum	...	702	279·2	...	5·7	320·5	49·9	38·5	58·4	41·3	123·9	96·9	8·5	380·3	1403·1
Barrackpore	...	444	540·5	2·3	13·5	409·9	65·3	166·7	130·6	78·8	108·1	51·8	29·3	614·9	2311·7
Gangetic Provinces.															
Hazareebaugh	...	870	...	...	1·1	246·9	28·2	33·0	70·5	37·5	241·2	53·5	87·6	320·8	1118·3
Dinapore	...	829	524·7	2·4	1·2	240·7	78·4	137·5	82·0	78·4	182·2	65·1	42·2	431·9	1875·7
Benares	...	493	176·5	6·1	6·1	204·9	30·4	64·9	99·4	38·5	306·3	109·5	22·3	401·6	1466·5
Fyzabad	...	966	169·8	38·3	2·1	138·7	25·9	33·1	35·2	41·4	206·0	47·6	13·5	238·1	989·7
Lucknow	...	2,426	355·8	14·8	2·1	185·5	32·2	105·5	40·4	64·3	227·5	44·5	34·2	389·5	1496·3
Seetapore	...	608	...	...	...	236·9	30·2	37·8	47·7	52·6	88·8	37·8	24·7	338·8	901·3
Futtehghur (8 months)	...	215	...	...	4·7	502·3	27·9	55·8	18·6	27·9	111·6	46·5	23·3	200·0	1018·6
Cawnpore	...	856	725·5	28·0	28·0	335·3	49·1	85·3	53·7	100·5	412·7	44·4	40·9	479·0	2412·4
Allahabad	...	985	276·1	44·7	5·1	437·6	42·6	79·2	76·1	50·8	163·5	55·8	49·7	384·8	1666·0
Rohilcund and Meerut.															
Shahjehanpore	...	380	...	2·6	...	223·7	44·7	81·6	39·5	94·7	84·2	26·3	21·1	281·6	900·0
Bareilly	...	758	...	...	2·6	254·6	23·7	75·2	51·5	67·3	228·2	84·4	18·5	360·2	1166·2
Moradabad	...	205	...	...	...	190·2	78·1	9·8	39·0	43·9	180·5	34·1	19·5	253·7	848·8
Roorkee	...	432	2·3	11·6	2·3	356·5	34·7	67·1	88·0	150·4	173·6	88·0	48·6	372·7	1395·8
Meerut	...	1,441	120·1	45·8	18·7	732·8	61·8	93·0	45·1	86·1	122·8	174·2	15·9	456·0	1972·9
Delhi	...	543	287·3	...	1·8	1057·1	47·9	117·9	75·5	103·1	195·2	70·0	14·7	430·9	2401·4
Muttra (10 months)	...	432	287·0	...	2·3	201·4	48·6	41·7	50·9	55·6	159·7	32·4	11·6	342·6	1233·8
Agra and Central India.															
Agra	...	1,156	326·1	26·0	6·0	181·7	31·1	71·8	27·7	40·7	213·7	34·6	82·0	230·9	1222·3
Morar	...	1,076	...	·9	1·9	685·9	16·7	66·0	44·6	75·3	149·6	90·1	18·6	340·2	1489·8
Gwalior Citadel	...	355	...	...	2·8	490·1	11·3	22·5	19·7	118·3	121·1	62·0	5·6	374·7	1228·1
Jhansi	...	401	...	...	5·0	1865·3	12·5	29·9	10·0	157·1	77·3	132·2	19·9	370·1	2688·3
Nowgong	...	315	...	6·3	6·3	746·0	6·3	41·3	38·1	190·5	140·1	85·7	28·6	460·3	1755·5
Saugor	...	456	...	...	...	1103·1	41·7	11·0	30·7	17·5	153·5	35·1	6·6	160·0	1559·2
Jubbulpore (9 months)	...	549	...	...	1·8	220·5	21·9	10·9	67·4	10·9	82·0	31·0	1·8	122·0	579·2
Punjab.															
Umballa	..	1,380	18·1	2·2	3·6	487·7	22·5	62·3	48·6	59·4	241·3	52·9	86·2	284·8	1319·6
Jullunder	...	800	...	8·8	1·2	286·2	11·2	87·5	32·5	50·0	167·5	86·3	38·8	232·5	1002·5
Ferozepore	...	1,118	...	...	10·7	350·6	36·7	88·5	18·8	84·0	163·7	63·5	40·3	358·7	1165·5
Mooltan	...	831	...	3·6	6·0	604·1	57·8	9·6	91·5	49·3	143·2	122·7	10·8	418·8	1517·4
Dera Ismael Khan	...	99	...	...	...	1484·9	40·4	30·3	80·8	40·4	181·8	171·7	60·6	252·5	2343·4
Sealkote	...	1,119	...	3·6	·9	406·6	42·0	43·8	87·6	91·2	166·2	83·1	19·7	527·2	1471·9
Umritsur	...	273	...	...	3·7	860·0	...	33·0	40·3	33·0	219·8	11·0	18·3	230·7	1450·6
Fort Lahore	...	82	...	85·4	24·4	1634·1	24·4	170·7	24·4	12·2	97·6	85·4	...	329·2	2487·8
Meean Meer	...	1,013	...	133·3	14·8	1161·9	66·1	187·5	41·5	73·0	189·5	109·6	41·5	479·8	2498·5
Rawulpindee	..	1,783	...	1·7	1·7	357·8	9·5	49·4	41·5	52·7	184·5	51·6	11·2	306·0	1157·6
Campbellpore	...	135	...	...	...	481·5	37·0	170·4	133·3	148·2	44·4	288·9	66·7	807·4	2177·8
Attock	...	180	...	16·7	5·6	1483·3	16·7	127·8	61·1	100·0	172·2	72·2	5·6	416·6	2477·8
Nowshera	...	693	...	...	1·4	1588·7	31·8	41·9	98·1	33·2	215·0	85·1	23·1	316·0	2434·3
Peshawur	...	1,570	...	36·3	2·6	1841·4	29·3	105·7	50·3	42·0	228·7	123·6	21·0	396·8	2877·7
Cherat (7 months)	...	760	...	1·3	1·3	181·6	46·1	28·9	51·3	21·1	36·8	38·2	9·2	150·0	565·8
Hill Stations.															
Darjeeling	...	85	...	...	...	188·2	23·5	23·5	47·1	141·2	153·0	23·5	...	329·4	929·4
Raneekhet	...	479	...	...	2·1	144·0	41·8	158·7	29·2	56·4	300·6	135·7	14·6	311·1	1194·2
Chuckrata (10 months)	...	884	...	3·4	...	84·8	4·5	21·5	41·9	29·4	130·1	44·1	2·3	107·5	469·5
Dugshaie (10 months)	..	940	...	30·9	...	71·3	12·8	64·9	8·5	68·8	123·4	58·5	18·1	242·5	604·7
Subathoo (10 months)	...	900	...	3·3	...	88·9	27·8	107·8	26·7	62·2	72·2	53·3	7·8	277·8	727·8
Jutogh (9 months)	...	95	...	...	...	31·6	...	63·1	21·1	42·1	94·7	21·1	...	115·8	389·5
Kangra (5 months)	...	34	...	...	...	...	...	...	...	...	...	...	...	...	
Dhurmsalla (8 months)	...	88	...	...	...	90·9	...	22·7	34·1	34·1	11·4	11·4	...	147·7	352·3
Murree Hills (5 months)	...	668	...	...	...	80·8	13·5	40·4	16·5	31·4	89·8	29·5	1·5	142·2	444·6

STATIONS.	Average Strength during the period of occupation.	Admitted into Hospital per 1,000 of Average Strength.												Admitted per 1,000 of the Average Strength from all Causes.
		Dengue.	Cholera.	Heat Apoplexy.	Fevers.	Dysentery.	Diarrhœa.	Hepatitis.	Rheumatism.	Venereal Diseases.	Diseases of the Respiratory Organs.	Ophthalmia.	All other causes.	
Convalescent Depôts.														
Darjeeling Depôt (9 months) ...	105	...	...	...	381·0	9·5	133·3	95·2	66·7	76·2	76·2	47·6	390·5	1276·2
Nynee Tal " (9 months) ...	241	...	...	...	269·7	29·1	58·1	107·9	153·5	107·9	95·4	...	439·8	1261·4
Landour " (7 months) ...	205	...	...	4·9	263·4	14·6	9·8	68·3	87·8	122·0	63·4	...	278·0	912·2
Kussowlie " (7 months) ...	656	...	41·2	...	307·9	18·3	239·3	120·6	29·0	170·7	76·2	9·2	277·4	1298·8
Dalhousie " (7 months)	502	...	...	...	127·5	21·9	49·8	63·7	25·9	251·0	57·8	23·9	237·1	858·6
Murree " (7 months) ..	526	...	62·7	...	157·8	7·6	93·2	30·4	47·5	169·2	51·3	9·5	243·4	872·6
Rajpootana, Malwa, Scinde, and Aden.														
Nusseerabad ...	646	99·1	...	7·7	1171·8	41·8	74·3	63·5	51·1	281·7	63·5	23·2	340·8	2227·5
Neemuch ...	468	...	62·0	4·3	619·6	15·0	27·8	21·4	19·2	209·2	12·8	8·5	220·1	1270·9
Indore ...	96	...	31·3	10·4	302·1	10·4	72·9	20·8	31·3	177·1	10·4	10·4	312·5	989·6
Mhow ...	1,432	...	2·8	3·5	807·3	7·7	39·1	25·8	43·3	185·0	42·6	15·4	334·5	1507·0
Deesa ...	897	660·0	...	8·9	1283·2	10·0	33·4	46·8	15·6	84·7	52·4	21·2	249·7	2474·9
Ahmedabad and Baroda ...	166	150·6	...	30·1	1114·4	...	126·5	42·2	120·5	144·6	60·2	48·2	765·1	2602·4
Kurrachee and Ghizree .	802	215·7	...	3·7	608·5	69·8	153·4	28·7	38·7	93·5	46·1	24·9	377·8	1060·8
Hyderabad ...	377	55·7	...	2·7	946·9	31·8	58·4	29·2	18·6	103·4	37·1	2·7	565·0	1851·5
Aden ..	703	536·3	...	17·1	211·9	56·9	93·9	52·6	54·0	71·1	31·3	11·4	290·2	1420·7
Deccan and Nagpore.														
Bombay ...	443	417·6	...	...	600·5	58·7	49·7	65·5	81·3	167·0	94·8	18·0	322·8	1875·9
Asseerghur (10 months) ...	130	7·7	..	7·7	538·5	15·4	38·4	30·8	38·4	115·4	130·8	...	515·4	1438·5
Ahmednuggur ...	592	...	1·7	6·8	314·2	6·8	16·9	18·6	25·3	150·3	50·7	20·3	273·6	885·2
Poona and Kirkee ...	2,308	435·4	3·5	...	358·8	58·9	75·4	17·8	81·4	121·3	51·1	26·9	336·7	1507·2
Sattara (10 months) ...	209	...	..	...	119·6	.	9·6	23·9	4·8	220·7	19·1	4·8	114·8	520·3
Belgaum ...	1,037	...	...	..	121·5	11·6	32·8	29·9	43·4	195·7	31·8	7·7	203·5	677·9
Secunderabad ...	2,586	...	1·2	7·3	243·6	167·1	117·6	56·5	39·8	198·4	52·2	18·9	446·6	1340·2
Kamptee ...	1,040	.	1·0	12·5	1137·5	19·2	104·8	25·0	40·4	155·8	123·1	25·9	420·2	2065·4
Southern India.														
Bellary (10 months) ...	942	...	..	2·1	155·0	30·8	80·7	20·2	46·7	255·8	43·5	35·0	302·0	1031·8
Bangalore ...	1,754	1·7	...	2·8	173·3	35·9	64·4	49·0	65·0	159·6	69·6	21·7	596·4	1230·4
Cannanore ...	747	41·5	...	1·3	152·6	154·0	83·0	61·6	38·8	108·4	62·9	2·7	548·9	1255·7
Mulliapoorum ...	96	...	...	...	20·8	166·7	62·5	31·2	41·7	52·1	104·2	10·4	281·2	770·8
Calicut ..	86	...	...	...	46·5	93·0	127·0	81·4	...	104·7	46·5	11·6	337·2	848·8
Trichinopoly ...	311	131·8	...	6·4	160·8	48·2	28·9	135·1	12·9	147·9	22·5	22·5	582·0	1299·0
St. Thomas' Mount ...	401	276·8	..	10·0	132·2	62·3	32·4	104·7	59·9	192·0	47·4	15·0	498·7	1431·4
Madras ...	742	397·6	...	8·1	250·7	32·3	70·1	70·1	106·4	140·2	115·6	26·9	738·5	1986·5
Burmah and Pegu.														
Rangoon ...	854	221·3	...	1·2	59·7	70·1	36·3	60·9	32·8	141·7	35·1	8·2	341·9	1015·2
Toungoo ...	465	141·9	...	2·2	101·1	116·1	43·0	105·4	34·4	133·3	36·6	6·4	283·9	1004·3
Thayetmyo ...	569	249·6	...	...	43·9	14·1	22·8	47·4	17·6	77·3	38·7	17·6	351·5	880·5
Port Blair ...	110	...	...	...	90·9	72·7	27·3	54·5	9·1	72·7	9·1	9·1	181·8	527·2
Hill Stations and Depôts.														
Mount Aboo ...	148	...	...	13·5	1891·9	20·3	168·9	87·8	47·3	216·2	60·8	13·5	310·8	2831·0
Poorundhur ...	64	...	...	...	843·7	31·2	93·8	46·9	62·5	15·6	93·8	...	265·6	1453·1
Puchmurree (Madras Troops, 10 months.)	151	...	...	...	1185·4	53·0	19·9	46·4	13·2	298·0	46·4	6·6	139·1	1808·0
Wellington ...	293	...	...	...	160·4	30·7	34·1	30·7	129·7	41·0	54·6	34·1	670·2	1194·5

EUROPEAN TROOPS, 1872.

XXII.

TABLE showing the MORTALITY in each STATION, the CAUSES of DEATH, and the RATIO of DEATHS to STRENGTH.

STATIONS.	Average Strength.	Causes of Deaths.																				Died out of Hospital.	Total Deaths.	Died per 1,000 of Strength.			
		Cholera.	Smallpox.	Enteric Fever.	Intermittent Fever.	Remittent Fever.	Continued Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other causes.			A. Cholera.	B. All other Causes. 1. In Hospital.	B. All other Causes. 2. Out of Hospital.	C. All Causes.
Deolalee Depôt (Bengal Troops) ...	...	...	...	...	...	1	...	2	...	...	...	...	...	1	1	1	...	...	...	...	2	...	8	...	...	...	...
Bombay ,, (Bengal Troops) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Bengal & N. W. P.	...	1	...	...	...	1	...	...	...	...	...	1	...	2	...	1	...	...	...	...	...	3	9	...	...	...	...
Recruits, Invalids, &c., ,,	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	1	1	2	1	8	...	...	...	...
Fort William ..	828	1	...	...	...	...	...	...	...	...	...	3	...	...	2	3	...	...	...	...	1	2	12	1·21	10·86	2·42	14·49
Dum-Dum	702	...	...	...	...	3	...	1	...	1	1	1	...	2	2	...	...	...	...	...	1	2	14	...	17·09	2·85	19·94
Barrackpore ...	444	1	...	...	...	2	...	2	...	1	...	1	...	1	...	...	...	...	...	...	1	1	10	2·25	18·02	2·25	22·52
	1,974	2	...	...	...	5	...	3	...	2	1	5	...	3	4	3	...	...	...	...	3	5	36	1·01	14·69	2·53	18·23
Hazareebaugh	879	...	...	2	...	...	1	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	6	...	6·83	...	6·83
Dinapore	829	2	2	...	...	...	1	...	...	2	2	4	...	1	...	...	...	...	...	...	2	2	18	2·41	16·89	2·41	21·71
Benares	493	2	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	3	8	4·06	6·09	6·08	16·23
Chunar	66	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	15·15	...	15·15
Fyzabad ..	968	21	...	1	...	1	...	1	...	1	...	5	...	1	4	1	...	...	...	...	...	...	36	21·74	15·53	...	37·27
Lucknow ..	2,426	25	...	3	...	...	3	4	...	3	...	4	...	2	3	2	...	...	...	...	3	6	58	10·31	11·13	2·47	23·91
Seetapore ..	608	...	...	1	...	1	1	...	...	...	...	2	...	...	1	...	...	...	...	...	1	...	7	...	11·51	...	11·51
Futtehghur (8 months) ...	215	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	4·65	...	4·65
Cawnpore ...	856	17	...	1	...	1	...	6	...	...	...	1	...	...	...	2	...	...	...	...	5	3	36	19·86	18·70	3·50	42·06
Allahabad ...	985	25	...	2	...	4	...	1	...	5	...	2	...	...	...	1	...	...	...	...	2	...	42	25·38	17·26	...	42·64
	8,251	92	2	10	...	7	6	15	...	11	2	22	...	5	8	6	...	...	...	...	13	14	213	11·15	12·97	1·69	25·81
Shahjehanpore ...	380	...	...	...	...	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	5	...	10·53	2·63	13·16
Bareilly ...	758	...	...	1	...	...	...	...	...	2	...	1	...	1	...	...	...	...	...	...	1	1	7	...	7·92	1·32	9·24
Moradabad	205	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	4·88	...	4·88
Roorkee ..	432	2	...	...	...	2	...	...	...	...	1	1	...	1	...	2	...	...	...	...	2	...	11	4·63	20·83	...	25·46
Meerut ...	1,441	47	...	3	...	...	4	4	3	7	1	7	...	8	3	2	...	1	...	1	8	...	99	32·62	36·08	...	68·70
Delhi	543	...	...	1	...	2	...	1	...	1	...	1	...	1	1	1	...	...	...	...	2	2	13	...	20·26	3·68	23·94
Muttra (10 months) ..	432	...	...	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	4	...	9·26	...	9·26
	4,119	40	...	7	...	7	4	5	4	10	4	11	...	11	4	5	...	1	...	1	13	4	140	11·90	21·11	·97	33·98
Agra ..	1,150	18	...	1	...	...	...	2	...	1	...	1	...	1	...	4	...	...	...	...	2	1	31	15·57	10·39	·86	26·82
Morar ...	1,076	...	...	...	...	...	...	2	...	1	...	5	...	1	2	...	...	...	...	...	1	1	13	...	11·15	·93	12·08
Gwalior Citadel ...	355	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...	2·82	2·82	5·64
Jhansi ...	401	...	...	...	...	1	...	1	...	...	...	...	...	1	1	1	...	...	...	...	...	...	5	...	12·47	...	12·47
Nowgong	315	2	...	...	1	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	1	1	8	6·35	15·88	3·17	25·40
Saugor ..	456	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	3	...	6·58	...	6·58
Jubbulpore (9 months) ...	549	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	3	...	5·47	...	5·47
	4,213	20	...	1	2	1	...	6	...	3	...	10	...	3	5	5	...	...	...	...	5	4	65	4·75	9·73	·95	15·43
Umballa	1,380	...	...	3	...	1	...	2	...	4	...	2	1	3	2	1	...	...	...	...	3	8	30	...	15·94	5·80	21·74
Phillour (5 months) ..	64	11	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	171·88	62·50	...	234·38
Jullundur ...	800	6	1	5	...	3	...	1	...	...	...	2	...	1	...	2	...	...	...	...	1	1	23	7·50	20·00	1·25	28·75
Ferozepore	1,118	...	...	2	...	...	...	3	...	1	...	3	...	...	4	1	...	...	...	...	...	...	14	...	12·52	...	12·52
Mooltan ...	831	2	...	...	...	4	...	1	...	2	...	1	...	2	1	...	...	...	...	...	1	2	16	2·41	14·43	2·41	19·25
Dera Ismael Khan	99	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...	20·20	...	20·20
Sealkote	1,119	4	...	2	...	1	3	1	...	...	...	3	...	2	1	...	...	...	...	1	...	2	20	3·57	12·51	1·79	17·87
Umritsur ..	273	...	...	...	...	2	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	5	...	18·32	...	18·32
Fort Lahore	82	7	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	85·37	36·58	...	121·95
Meean Meer	1,013	88	...	3	...	...	1	6	1	9	...	1	...	1	3	2	...	...	1	...	1	...	117	86·87	28·63	...	115·50
Rawulpindee ..	1,783	3	2	7	...	...	2	3	...	3	...	2	...	3	3	1	...	...	...	1	3	5	38	1·68	16·83	2·80	21·31
Campbellpore ..	135	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...	14·81	...	14·81
Attock ...	180	3	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	16·67	11·11	...	27·78
Nowshera	693	...	...	2	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	2	7	...	7·21	2·89	10·10
Peshawur ...	*2,044	44	1	2	1	3	...	2	...	1	1	...	...	1	2	5	...	...	...	...	1	3	67	21·53	15·65	1·47	38·65
Cherat ...		...	...	6	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...	...	2	...	12				
Troops on march, Punjab ...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	...	...	2	1	7	...	...	...	...
Recruits, Invalids, &c., Punjab ...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...
	12,118	168	5	33	1	20	6	25	1	23	1	22	1	17	17	12	...	...	1	2	14	24	393	13·86	16·59	1·98	32·43
Darjeeling ...	85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet	479	...	...	4	...	...	1	...	...	7	1	...	...	2	...	...	...	...	...	...	3	...	18	...	37·58	...	37·58
Chuckrata (10 months) ..	884	1	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	3	...	7	1·13	6·79	...	7·92
Dugshaie (10 months) ...	940	20	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	2	...	26	21·28	6·38	...	27·66
Subathoo (10 months) ...	900	...	...	2	...	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	1	1	7	...	6·67	1·11	7·78
Jutogh (9 months) ...	95	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla and Kangra (8 months)...	109	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills (5 months) ...	668	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	3	...	2·99	1·50	4·49
As for 12 Months ...	3,379	21	...	8	1	...	1	...	...	10	2	2	...	2	1	1	...	...	1	...	9	2	61	6·22	11·25	·59	18·06
Darjeeling Depôt (9 months) ...	105	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2	...	9·52	9·52	19·05
Nynee Tal ,, (9 months) ...	241	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	3	...	8·30	4·15	12·45
Landour ,, (7 months) ...	205	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	...	...	...	1	...	4	...	19·51	...	19·51
Kussowlie ,, (7 months) ...	656	13	...	...	...	2	...	...	...	2	...	8	...	3	...	1	...	...	...	1	1	...	31	19·82	27·44	...	47·26
Dalhousie ,, (7 months) ...	502	...	...	...	...	...	...	...	...	1	...	1	...	1	...	1	...	...	...	...	...	...	4	...	7·97	...	7·97
Murree ,, (7 months) ...	526	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	25	43·73	3·80	...	47·53
For Season of Occupation ...	2,320	36	...	...	...	2	...	1	...	4	...	12	...	4	1	2	...	...	...	1	4	2	69	15·51	13·37	·86	29·74

---

* Cherat was occupied from the middle of April to the end of November. The average strength present during this period was 760.

† During June, July and August, when this depôt was fully occupied, the strength present was 700. In November and up to the middle of December, a strength of 460 invalids remained at the depôt.

STATIONS.	Average Strength.	Causes of Deaths.																				Died out of Hospital.	Total Deaths.	Died per 1,000 of Strength.			
		Cholera.	Smallpox.	Enteric Fever.	Intermittent Fever.	Remittent Fever.	Continued Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other causes.			A. Cholera.	B. All other Causes. 1. In Hospital.	B. All other Causes. 2. Out of Hospital.	C. All Causes.
On the march, &c., Bombay Presidency,	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	3	...	...	...	...
Deolalee Depôt, Bombay Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...	...	...
Poona Depôt, „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	1		4	...	...	...	...
Colaba Depôt, „ ...	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
On the march, &c., Madras Presidency	...	...	...	...	...	...	...	...	...	2	...	1	...	...	2	4	...	...	...	...	2	1	12	...	...	...	...
Poonamallee and Presidency Depôts	154	...	...	...	...	...	...	2	...	2	...	6	...	...	3	3	...	...	...	...	...	...	16	...	...	...	...
Deolalee Depôt, Madras Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	2	...	...	...	...
Poona and Bombay Depôts „ ...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...	...	...	1		4	...	...	...	...
Nusseerabad ...	646	...	...	7	...	...	...	2	...	1	...	2	...	1	...	...	...	...	...	...	1	...	14	...	21·67	...	21·67
Neemuch ..	468	21	...	1	...	...	...	2	...	...	...	...	...	1	1	...	...	...	...	...	...	...	26	44·87	10·68	...	55·55
Indore ...	96	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	4	31·25	10·42	...	41·67
Mhow ..	1,432	3	...	...	...	1	...	3	...	1	...	4	...	...	1	3	...	...	...	...	2	1	19	2·09	10·47	·70	13·26
Deesa ...	897	...	...	...	2	...	1	6	1	...	...	2	...	...	1	7	...	...	...	...	3	1	24	...	25·64	1·12	26·76
Ahmedabad and Baroda ..	166	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	1	4	...	18·07	6·03	24·10
Kurrachee and Ghizree ...	802	...	...	4	...	...	2	3	...	1	...	1	...	...	...	...	...	...	...	...	3	1	15	...	17·45	1·25	18·70
Hyderabad ...	377	...	...	3	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	4	10	...	15·92	10·61	26·53
Aden ..	703	...	...	1	...	...	...	4	...	2	...	3	...	1	1	...	...	...	...	...	...	6	18	...	17·07	8·53	25·60
	5,587	27	...	16	2	1	3	22	1	5	...	12	...	5	4	12	...	...	...	...	10	14	134	4·83	16·64	2·51	23·98
Bombay ...	443	...	...	2	...	2	...	...	1	...	...	5	...	...	...	...	...	...	...	...	...	...	10	...	22·57	...	22·57
Asseerghur (10 months) ..	130	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	7·69	...	7·69
Ahmednuggur ...	592	1	...	1	...	...	...	3	...	1	...	...	...	...	2	...	...	...	...	...	2	...	10	1·69	15·20	...	16·89
Poona and Kirkee ...	2,308	7	1	4	...	...	...	...	...	6	...	...	...	1	...	4	...	1	...	...	2	1	27	3·03	8·24	·43	11·70
Sattara (10 months) ...	209	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	4·78	4·78	9·57
Belgaum ..	1,037	...	...	...	...	...	...	...	...	1	...	3	...	...	2	...	...	...	...	...	...	...	6	...	5·78	...	5·78
Secunderabad ...	2,586	1	...	14	...	...	1	8	1	17	...	12	...	1	6	2	...	...	...	...	5	2	70	·39	25·01	·77	27·07
Kamptee ...	1,040	1	2	...	...	2	4	4	...	2	...	2	...	...	3	1	...	...	...	...	1	...	22	·96	20·19	...	21·15
	8,307	10	4	21	...	4	5	16	2	27	...	22	...	2	13	7	...	1	...	...	10	4	148	1·20	16·13	·48	17·81
Bellary (10 months) ..	942	...	...	...	...	...	1	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	5	...	5·31	...	5·31
Bangalore ...	1,751	...	...	7	...	...	...	3	1	2	...	4	...	...	3	1	...	...	...	1	3	2	27	...	14·24	1·15	15·39
Cannanore ...	747	...	...	4	...	...	...	1	...	2	...	1	...	...	1	...	...	...	...	...	1	...	10	...	13·39	...	13·39
Malliapoorum ...	96	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	2	...	10·41	10·41	20·83
Calicut ...	86	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...		...	1	...	11·63	...	11·63
Trichinopoly ...	311	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	1	1	5	...	12·86	3·22	16·08
St. Thomas' Mount ...	401	...	...	1	...	...	...	1	...	1	...	3	...	...	2	...	...	...	...	...	...	...	8	...	19·95	...	19·95
Madras ...	742	...	...	...	...	...	...	4	...	...	...	...	...	...	1	1	...	...	...	...	2	1	9	...	10·78	1·35	12·13
	4,949	...	...	12	...	...	1	11	1	6	...	10	...	...	7	6	...	...	...	1	7	5	67	...	12·53	1·01	13·54
Rangoon ...	854	...	...	...	...	...	...	1	...	1	...	2	...	...	1	...	...	...	...	...	2	4	11	...	8·20	4·68	12·88
Toungoo ...	465	...	...	...	...	...	...	1	1	1	...	1	...	...	2	...	...	...	...	...	...	1	7	...	12·90	2·15	15·05
Thayetmyo ..	569	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1	...	3	...	5·27	...	5·27
Port Blair ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,998	...	...	...	...	...	...	2	2	2	...	4	...	...	3	...	...	...	...	...	3	5	21*	...	8·00	2·50	10·50
Taraghur, Ajmere (7 months) .	43	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	4	23·25	69·77	...	93·02
Mount Aboo	148	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	3	...	20·27	...	20·27
Poorundhur	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (10 months)	151	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	2	...	13·24	...	13·24
Ramandroog ..	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...	...
Wellington ...	293	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3	...	10·24	...	10·24
As for the Year .	685	1	...	2	...	...	...	2	...	...	...	2	...	...	1	1	...	...	...	1	2	...	12	1·46	16·06	...	17·52

ARMIES.	Average Strength.	Causes of Deaths.																				Died out of Hospital.	Total Deaths.	Died per 1,000 of Strength.			
		Cholera.	Smallpox.	Enteric Fever.	Intermittent Fever.	Remittent Fever.	Continued Fever.	Apoplexy.	Delirium Tremens.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other causes.			A. Cholera.	B. All other Causes. 1. In Hospital.	B. All other Causes. 2. Out of Hospital.	C. All Causes.
Army of Bengal ..	36,507	389	7	59	4	44	17	58	5	64	10	86	1	48	41	36	...	1	3	5	65	59	1,002	10·66	15·15	1·64	27·45
Army of Madras ..	11,544	2	2	27	...	2	6	28	4	32	...	38	...	1	24	19	...	...	...	1	20	13	219	·17	17·68	1·13	18·98
Army of Bombay ...	10,819	36	2	24	2	3	3	28	2	13	...	20	...	7	10	18	...	1	...	1	17	17	204	3·33	13·96	1·57	18·86
Army of India ...	58,870	427	11	110	6	49	26	114	11	109	10	144	1	56	75	73	...	2	3	7	102	89	1,425	7·25	15·43	1·53	24·21

* See Note to Table XVI.

EUROPEAN TROOPS, 1872.

XXIII.

TABLE showing the PREVALENCE of CHOLERA in each MONTH, and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Deolalee Depôt (Bengal Troops)	...	...	...	.	...	..	...	..	...	...	...	..	...	...	..	...	.
Poona and Bombay Depôts (Bengal Troops) ...	...	...	...	...	...	...	...	.	...	...	...	..	..	...	...	..	...
Troops marching, Bengal and N. W. P. ...	...	...	...	1	..	..	...	...	..	...	...	...	...	1	...	1	...
Recruits, Invalids, &c., „ ...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Fort William ..	828	...	...	...	...	...	...	1	...	1	...	...	...	2	...	1	...
Dum-Dum ..	702	...	...	...	...	..	..	...	...	...	...	...	...	...	..	..	...
Barrackpore ...	444	...	..	...	..	..	...	...	...	..	...	1	...	1	..	1	...
	1,974	...	...	...	...	...	...	1	...	1	...	1	...	3	1·5	2	1·01
Hazareebaugh ...	879	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore ...	829	...	...	...	...	...	...	1	...	...	...	...	1	2	...	2	...
Benares ...	493	...	...	...	3	...	...	...	...	...	...	...	...	3	...	2	...
Chunar ..	66	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	966	...	...	...	...	...	...	...	5	32	...	...	...	37	..	21	...
Lucknow ...	2,126	..	...	...	...	3	...	9	14	6	2	2	...	36	...	25	...
Seetapore ..	608	...	...	...	...	...	...	.	...	...	...	...	...	...	...	...	...
Futtehghur (8 months) ...	215	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore ...	856	...	..	...	...	16	8	...	...	...	...	...	...	24	...	17	...
Allahabad ...	985	...	...	...	2	4	...	...	37	1	.	...	...	44	...	25	...
	8,251	...	...	..	5	23	8	10	56	39	2	2	1	146	17·7	92	11·15
Shahjehanpore ...	380	...	...	...	..	...	...	..	1	..	...	...	...	1	...	...	...
Bareilly ...	758	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad ..	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Roorkee ...	432	...	...	...	...	...	...	..	...	5	...	...	...	5	..	2	...
Meerut ...	1,141	...	...	...	..	...	...	...	12	54	...	...	...	66	...	47	...
Delhi .	549	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra (10 months) ..	432	...	..	...	...	...	...	...	...	...	...	...	...	...	...		...
	4,119	...	...	..	...	...	...	...	13	59	...	.	...	72	17·5	49	11·90
Agra ..	1,156	...	...	...	..	5	15	5	3	2	...	...	...	30	...	18	...
Morar ..	1,076	...	...	...	...	...	1	...	...	...	..	...	...	1	..	...	.
Gwalior Citadel ...	355	...	...	...	...	...	.	..	..	...	...	..	..	...	...	...	...
Jhansi ...	401	...		...		...	...	...	...	...	...	...	...	...	...	...	...
Nowgong ...	315		..	...	...	...	...	.	2	..	...	..	...	2	...	2	...
Saugor ..	456	...	...	...	...	...	..	...	...	...	..	..	.	.	...	...	...
Jubbulpore .	454	..	...	...	...	...	...	...	.	...	...	..	...	...	...	...	...
	4,213	..	...	...	...	5	16	5	5	2	..	...	..	33	7·9	20	4·75
Umballa ...	1,380	..	...	...	...	...	..	...	1	2	...	...	...	3	...	...	...
Phillour (5 months) ..	64	...	...	..	...		...		5	6	...	...	...	11	...	11	...
Jullundur ..	800	...	...	...	...	...	...	...	4	3	..	...	...	7	...	6	...
Ferozepore ...	1,118	...	.	...	...	..		..	...	..	...	..	..	..	...	...	...
Mooltan ...	831	..	..	..	...	...	...		3	...	..	...	...	3	..	2	...
Dera Ismael Khan	99	...	...	..	...		...	..	..	...	...	...	...	...	..	...	...
Sealkote ..	1,119	...	...	...	1	3	...	..	...	.	...	...	...	4	..	4	...
Umritsur ...	273	.	...	..	...	..	..		...	.	...	...	...	...	...	...	...
Fort Lahore ..	82	...	...	...	...	..	...	6	1	...	...	...	...	7	...	7	...
Meean Meer ...	1,013	..	...	..	...	...	..	1	129	5	..	...	...	135	...	88	...
Rawulpindee ..	1,783	..	...	..	...	...	.	1	...	2	...	...	...	3	...	3	...
Campbellpore ..	135	...	...	...	...	...	..	..	..	...	...	...	...	...	...	...	...
Attock ...	180	...	..	...	...	...	..	.	...	...	3	...	...	3	...	3	...
Nowshera ...	693	...	...	...	...	...	...	..	...	...	...	..	..	...	...	...	...
Peshawur ...	2,044	...	...	...	...	..	...	.	...	...	57	..	...	57	...	44	...
Cherat ..											1	...	...	1	...	...	...
Troops on march, Punjab ...	...	...	...	...	...	...	..	...	...	..	...	...	...	...	...	...	...
Recruits, Invalids, &c., Punjab	...	...	...	...	...	...		..	...	...	...	...	...	...	...	...	...
	12,118	...	...	..	1	3	..	8	143	18	61	...	.	234	19·3	168	13·86
Darjeeling ...	85	..	..	...	...	...	..	..	...	...	...	...	...	...	...	...	...
Raneekhet ...	479	...	...	...	...	...	...	..	.	...	..	...	...	...	...	...	...
Chukrata .	772	...	.	...	..	...	...	...	3	...	...	...	...	3	...	1	...
Dugshaie (10 months) ..	940	...	...	...	...	...	...	...	25	1	3	...	...	29	...	20	...
Subathoo (10 months) .	900	...	...	...	...	...	...	3	...	...	..	...	...	3	...	...	...
Jutogh (9 months) ..	95	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra ...	109	...	...	..	...	...	...	..	...	...	...	...	...	...	..	...	...
Dhurmsalla (8 months) .																	
Murree (5 months) ...	668	...	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...
As for 12 Months ...	3,379	...	...	..	...	...	...	3	28	1	3	...	...	35	10·4	21	6·22
Darjeeling Depôt (9 months) ...	105	.	...	...	...	..	...	...	...	..	...	...	.	...	...	...	...
Nynee Tal „ (9 months) ...	241	...	...	..	...	..	...	...	...	...	...	...	...	...	..	...	...
Landour „ (7 months) ...	205	...	...	...	...	..	...	.	...	...	...	...	...	...	...	...	..
Kussowlie „ (7 months) ...	658	...	...	...	...	...	...	11	16	...	...	...	...	27	...	13	...
Dalhousie „ (7 months) ...	502	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree „ (7 months) ...	528	...	...	...	...	.	..	..	10	23	...	...	...	33	...	23	...
For Season of Occupation ...	2,325	...	...	...	...	...	...	11	26	23	...	...	...	60	25·9	36	15·51
Bengal Presidency ..	36,607	..	...	1	6	31	24	38	271	143	66	3	1	584	16·0	389	10·66

STATIONS.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Troops on march, Bombay Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona " "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba " "	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Madras Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts	154	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, (Madras Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts (Madras Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad	646	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neemuch	468	...	...	...	...	...	2	6	9	12	...	...	...	29	...	21	...
Indore	96	...	...	...	...	2	...	...	1	...	...	...	...	3	...	3	...
Mhow	1,432	...	...	...	3	1	...	...	...	...	...	...	...	4	...	3	...
Deesa	807	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree	802	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad	377	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden	703	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5,587	...	...	...	3	3	2	6	10	12	...	...	...	36	6·4	27	4·83
Bombay	443	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur (10 months)	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur	502	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Poona and Kirkee	2,308	...	...	...	...	...	...	7	1	...	...	...	...	8	...	7	...
Sattara	187	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum	1,037	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad	2,586	...	...	...	1	...	...	...	...	...	...	2	...	3	...	1	...
Kamptee	1,040	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
	8,307	...	...	...	1	...	2	7	1	...	...	2	...	13	1·6	10	1·20
Bellary	812	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore	1,754	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cannanore	747	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malliapoorum	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut	86	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly	311	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount	401	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras	742	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,949	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rangoon	854	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungoo	465	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo	569	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,998	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Taraghur, Ajmere (7 months)	43	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...
Mount Aboo	148	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Madras Troops, 10 months)	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington	293	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE FOR THE YEAR	685	...	...	...	...	...	...	...	...	...	1	...	...	1	1·5	1	1·46

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Army of Bengal	36,507	...	...	1	6	31	24	38	271	143	66	3	1	584	16·0	389	10·66
Army of Madras	11,544	...	...	...	1	...	1	...	...	...	...	2	...	4	·4	2	·17
Army of Bombay	10,819	...	...	...	3	3	3	13	11	12	1	...	...	46	4·3	36	3·33
Army of India	58,870	...	...	1	10	34	28	51	282	155	67	5	1	634	10·7	427	7·25

EUROPEAN TROOPS, 1872.

XXIV.

TABLE showing the PREVALENCE of DENGUE in each MONTH, and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Deolalee Depôt (Bengal Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on the march	...	...	...	...	...	...	...	...	...	...	...	56	9	65	...	...	...
Recruits, Invalids, &c.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	828	...	...	7	74	48	29	52	33	1	...	...	...	244	...	...	...
Dum-Dum	702	...	...	...	85	98	7	5	1	...	...	...	...	196	...	...	...
Barrackpore	444	...	...	...	37	163	35	3	2	...	...	...	...	240	...	...	...
	1,974	...	...	7	196	309	71	60	36	1	...	...	...	680	344·5	...	...
Hazareebaugh	879	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore	820	...	...	...	...	...	3	179	190	43	19	1	...	435	...	...	...
Benares	493	...	...	...	...	6	2	...	23	42	14	...	...	87	...	...	...
Chunar	66	...	...	...	...	...	...	...	1	1	...	...	...	2	...	...	...
Fyzabad	966	...	...	...	...	...	...	...	...	...	24	71	69	164	...	...	...
Lucknow	2,426	...	...	...	...	...	...	...	34	220	363	217	29	863	...	...	...
Seetapore	608	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur (8 months)	215	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	856	...	...	...	...	...	...	...	34	338	235	13	1	621	...	...	...
Allahabad	985	...	...	...	...	...	...	2	141	98	27	2	2	272	...	...	...
	8,251	...	...	...	...	6	5	181	423	742	682	304	101	2,444	296·2	...	...
Shahjehanpore	380	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly	758	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	432	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Meerut	1,441	...	...	...	...	1	...	...	...	52	43	42	35	173	...	...	...
Delhi	543	...	...	...	...	...	...	...	1	139	14	2	...	156	...	...	...
Muttra (10 months)	432	...	...	...	...	...	...	...	...	15	109	...	...	124	...	...	...
	4,119	...	...	...	...	1	...	...	1	207	166	44	35	454	110·2	...	...
Agra	1,156	...	...	...	...	...	...	...	6	176	149	38	8	377	...	...	...
Morar	1,076	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel	355	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	401	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	315	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	456	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	454	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,213	...	...	...	...	...	...	...	6	176	149	38	8	377	89·5	...	...
Umballa	1,380	...	...	...	...	...	...	...	...	...	9	13	3	25	...	...	...
Phillour (5 months)	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	800	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ferozepore	1,118	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	831	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	1,119	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	273	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	82	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	1,013	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindee	1,783	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	693	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur Cherat	2,044	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	12,118	...	...	...	...	...	...	...	...	...	9	13	3	25	6·7	...	...
Darjeeling	85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet	479	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata	772	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshaie (10 months)	940	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo ((10 months)	900	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jutogh (9 months)	95	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra Dhurmsalla (8 months)	109	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills (5 months)	668	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AS FOR 12 MONTHS	3,379	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darjeeling Depôt (9 months)	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal „ (9 months)	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour „ (7 months)	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie „ (7 months)	656	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie „ (7 months)	602	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree (7 months)	528	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
BENGAL PRESIDENCY	36,507	...	...	7	196	316	76	241	466	1,126	1,006	455	156	4,045	110·8	...	...

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Troops marching, Bombay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Poona Depôt, ,,	...	...	...	18	12	...	...	...	2	8	1	...	...	41	...	...	...
Colaba Depôt, ,,	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops marching, Madras	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts	154	...	...	...	...	...	...	18	22	...	...		...	40	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts, Madras Troops	...	...	...	31	7	...	...	...	...	...	...	...	...	38	...	...	...
Nusseerabad	648	...	...	...	...	...	...	...	...	...	...	13	51	64	...	...	...
Neemuch	468	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indore	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow	1,432	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deesa	897	...	...	...	...	...	41	479	69	3	...	...	...	592	...	...	...
Ahmedabad and Baroda	166	...	...	...	...	...	...	9	16	...	...	...	...	25	...	...	...
Kurrachee and Ghizree	802	...	...	...	...	...	...	...	...	...	50	65	58	173	...	...	...
Hyderabad	377	...	...	...	...	...	...	...	...	...	...	12	9	21	...	...	...
Aden	703	...	...	3	7	199	114	23	19	4	4	...	4	377	...	...	...
	5,587	...	...	3	7	199	155	511	104	7	54	90	122	1,252	224·1	...	...
Bombay	443	...	...	...	6	70	77	27	2	...	3	...	...	185	...	...	...
Asseerghur	130	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Ahmednuggur	592	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Kirkee	2,308	...	...	243	450	80	26	49	43	67	39	5	3	1,005	...	...	...
Sattara	187	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum	1,037	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad	2,586	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kamptee	1,040	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	8,307	...	...	243	456	150	103	77	45	67	42	5	3	1,191	143·3	...	...
Bellary	812	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore	1,754	...	...	...	3	...	...	...	...	...	...	...	...	3	...	...	...
Cannanore	747	30	1	...	...	...	...	...	...	...	...	...	...	31	...	...	...
Malliapoorum	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut	86	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly	311	...	...	...	...	...	...	...	...	18	20	2	1	41	...	...	...
St. Thomas' Mount	401	...	...	...	24	72	9	4	...	2	...	...	...	111	...	...	...
Madras	742	...	...	...	3	5	43	118	58	51	16	1	...	295	...	...	...
	4,949	30	1	...	30	77	52	122	58	71	36	3	1	481	97·2	...	...
Rangoon	854	...	1	...	18	59	67	43	1	...	...	...	...	189	...	...	...
Toungoo	465	...	...	...	...	...	...	...	20	30	11	4	1	66	...	...	...
Thayetmyo	569	...	...	...	...	65	44	30	3	...	...	...	...	142	...	...	...
Port Blair	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,998	...	1	...	18	124	111	73	24	30	11	4	1	397	198·7	...	...
Taraghur, Ajmere (7 months)	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo	148	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Madras Troops, 10 months)	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington	293	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE FOR THE YEAR	685	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Army of Bengal	36,507	...	...	7	196	316	76	241	466	1,126	1,006	455	156	4,045	110·8	...	...
Army of Madras	11,544	30	2	31	55	201	163	213	104	101	47	7	2	956	82·8	...	...
Army of Bombay	10,819	...	...	264	475	350	258	588	151	82	97	95	125	2,485	229·7	...	...
Army of India	58,870	30	2	302	726	867	497	1,042	721	1,309	1,150	557	283	7,486	127·2	...*	...

* Of the few deaths attributed to dengue, nearly all were due to heat apoplexy, occurring in the course of the fever.

EUROPEAN TROOPS, 1872.

XXV.

TABLE showing the PREVALENCE of ENTERIC FEVER and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the period of occupation.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death rate p 1,000 Streng
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Doolalee Depôt (Bengal Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts (Bengal Troops)	...	...	...	1*	...	...	...	...	...	...	...	3*	...	4	...	...	...
Troops on march, Bengal and N. W. Provinces	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Recruits, Invalids, &c., „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	828	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...
Dum-Dum	702	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore	444	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,974	...	...	1	...	1	...	...	...	...	...	...	...	2	1·0	...	...
Hazareebaugh	879	...	...	...	3	2	1	...	1	...	...	...	...	7	...	2	...
Dinapore	829	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...
Benares	493	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chunar	66	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	966	...	2	...	...	...	...	...	...	...	...	...	1	3	...	1	...
Lucknow	2,426	1	...	1	1	1	...	...	1	...	2	...	1	8	...	3	...
Seetapore	608	...	...	...	...	...	...	...	1	1	...	...	...	2	...	1	...
Futtehghur (8 months)	215	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	856	...	...	...	...	1	...	1	...	...	...	...	1	3	...	1	...
Allahabad	985	2	1	...	...	...	...	...	...	...	...	...	...	3	...	2	...
	8,251	3	3	1	4	4	1	2	4	1	2	...	3	28	3·4	10	1·
Shahjehanpore	380	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly	758	...	...	...	...	1	...	1	...	...	...	...	...	2	...	1	...
Moradabad	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	432	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	1,441	...	...	...	1	1	...	...	...	3	1	...	...	6	...	3	...
Delhi	543	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
Muttra	432	...	...	...	...	...	...	...	1	...	2	...	...	3	...	2	...
	4,119	...	...	...	1	2	...	1	1	3	3	1	...	12	2·9	7	1·
Agra	1,156	1	...	...	1	...	...	...	...	...	...	...	...	2	...	1	...
Morar	1,076	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel	355	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Jhansi	401	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	315	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	456	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	454	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,213	1	...	...	1	...	...	...	...	1	...	...	...	3	·7	1	
Umballa	1,380	...	...	...	...	...	...	...	2	1	2	...	...	5	...	3	...
Phillour (5 months)	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	800	...	...	...	...	1	...	...	1	4	1	...	...	7†	...	5†	...
Ferozepore	1,118	1	...	...	...	...	...	...	...	...	1	...	...	2	...	2	...
Mooltan	831	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	1,119	...	...	...	...	...	...	...	...	1	...	1	...	2	...	2	...
Umritsur	273	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...
Fort Lahore	82	...	...	...	...	2	...	...	...	...	...	...	...	2	...	1	...
Meean Meer	1,013	...	...	...	1	1	4	1	...	...	...	...	...	7	...	3	...
Rawulpindee	1,783	2	1	...	...	1	2	4	...	...	...	...	...	10†	...	7†	...
Campbellpore	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	180	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Nowshera	693	...	...	...	...	...	1	...	1	...	...	...	...	2	...	2	...
Peshawur	} 2,044	...	...	...	... {	...	2	...	1	...	...	...	...	3	...	2	...
Cherat						3	1	1	...	...	...	...	...	5	...	6	...
Troops on march, Punjab	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Recruits, Invalids, &c. „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	12,118	3	2	...	1	8	10	6	5	6	4	1	1	47	3·9	33	2·
Darjeeling	85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet	479	...	...	...	...	...	...	1	1	...	2	...	...	4	4	4	...
Chuckrata	772	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshaie (10 months)	940	...	...	...	...	...	...	1	...	...	...	...	...	1	1	1	...
Subathoo (10 months)	900	...	...	...	...	1	...	...	...	1	...	...	...	2	2	2	...
Jutogh (9 months)	95	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra Dhurmsalla } (8 months)	109	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills (5 months)	668	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
AS FOR 12 MONTHS	8,379	...	...	...	...	1	...	2	1	1	2	...	...	7	2·1	8	2·
Darjeeling Depôt (9 months)	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal „ (9 months)	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour „ (7 months)	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie „ (7 months)	656	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie „ (7 months)	502	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree „ (7 months)	526	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
FOR SEASON OF OCCUPATION	2,325	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

* These cases were landed from the Overland Troopships.

† Stations of Regiments recently arrived from England.

STATIONS.	Average Strength for the period of occupation.	* Number of Admissions into Hospital in each Month. Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
Troops on march, Bombay Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona „ „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba „ „	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Madras Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
Poonamallee and Presidency Depôts ...	154	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts, Madras Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	646	...	...	...	1	...	...	...	1	4	...	1	...	7	...	7	...
Neemuch ...	468	...	1	...	...	...	...	...	...	1	...	...	...	2	...	1	...
Indore ...	98	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Mhow ...	1,432	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deesa ...	897	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Ahmedabad and Baroda ...	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree ...	802	2	...	...	...	2	...	...	1	3	...	...	...	8	...	4	...
Hyderabad ...	377	...	...	...	...	...	...	...	...	2	...	...	1	3	...	3	...
Aden ...	703	...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	5,587	2	2	...	1	2	...	...	2	12	...	1	1	23	4·1	16	2·86
Bombay ...	443	...	...	...	2	...	...	...	...	...	...	...	1	3	...	2	...
Asseerghur ...	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	502	...	...	...	...	...	...	...	...	1	1	2	...	4	...	1	...
Poona and Kirkee ...	2,308	1	...	...	...	...	...	...	3	...	2	...	...	6	...	4	...
Sattara ...	187	...	...	...	...	...	...	...	...	...	...	...	3	3	...	...	...
Belgaum ...	1,037	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad ...	2,586	2	2	3	4	4	1	3	3	10	3	...	...	35	...	14	...
Kamptee ...	1,040	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	8,307	3	2	3	6	4	1	3	6	11	6	2	4	51	6·1	21	2·53
Bellary ...	812	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore ...	1,754	1	3	6	1	3	2	8	4	...	...	...	...*	28	...	7	...
Cannanore ...	747	1	...	...	...	...	...	1	...	...	...	...	12	14	...	4	...
Malliapoorum ...	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut ...	88	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly ...	311	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount ...	401	...	...	...	...	...	...	1	1	...	...	...	1	3	...	1	...
Madras ...	742	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	4,949	2	3	6	1	3	2	5	5	...	...	...	13	40	8·1	12	2·43
Rangoon ...	854	1	1	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Toungho ...	465	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo ...	569	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,998	1	1	...	...	...	...	...	...	...	...	...	...	2	1·0	...	...
Taraghur, Ajmere (7 months) ...	43	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...
Mount Aboo ...	148	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ...	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Madras Troops, 10 months) ...	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	293	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
AVERAGE FOR THE YEAR ...	685	...	...	...	...	...	1	...	...	...	1	...	...	2	2·9	2	2·92

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month. Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
Army of Bengal ...	36,507	7	5	8	7	16	11	11	11	12	11	5	4	108	2·9	59	1·62
Army of Madras ...	11,544	5	6	9	5	7	4	8	8	10	3	...	13	78	6·8	27	2·34
Army of Bombay ...	10,819	3	2	...	3	2	...	...	5	13	4	3	5	40	3·7	24	2·23
Army of India ...	58,870	15	13	12	15	25	15	19	24	35	18	8	22	221	3·8	110	1·87

* H. M.'s 43rd Regiment, arrived from England in November 1872.

EUROPEAN TROOPS, 1872.

XXVI.

TABLE showing the PREVALENCE of FEVER in each MONTH, and the DISTRIBUTION of FEVERS by STATIONS and PROVINCES.

(Excluding Enteric Fever, which is shown separately in Table XXV.)

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Deolalee Depôt (Bengal Troops)	...	3	3	2	...	...	...	1	1	...	1	7	...	18	...	1	...
Poona and Bombay Depôts (Bengal Troops) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Bengal and N. W. P. ...	...	20	16	...	...	...	...	...	...	...	...	21	37	94	...	1	...
Recruits, Invalids, &c., Bengal and N. W. P. ...	...	...	4	22	4	...	...	...	...	...	...	...	...	30	...	...	...
Fort William ...	828	23	7	15	33	37	60	101	79	33	18	15	29	450	...	...	...
Dum-Dum ...	702	24	14	13	29	3	6	18	26	20	39	27	6	225	...	3	...
Barrackpore ..	444	9	12	13	22	9	14	18	10	7	14	29	25	182	...	2	...
	1,974	56	33	41	84	49	80	137	115	60	71	71	60	857	434·2	5	2·53
Hazareebaugh ...	879	11	2	5	12	10	8	14	27	48	44	21	8	210	...	1	...
Dinapore ...	829	13	8	13	14	14	17	23	6	22	50	19	6	205	...	1	...
Benares ...	403	4	5	4	4	14	13	15	19	6	9	5	3	101	...	...	...
Chunar ...	66	1	..	...	1	...	...	4	9	12	8	5	2	42	...	...	...
Fyzabad ...	966	5	6	9	11	12	12	11	6	4	38	10	7	131	...	1	...
Lucknow ...	2,426	9	12	10	43	34	86	56	54	54	43	16	16	442	...	3	...
Seetapore ..	608	1	2	2	37	16	19	15	15	14	7	2	12	142	...	2	...
Futtehghur (8 months) ..	215	...	...	8	18	15	14	17	9	15	17	...	...	108	...	...	...
Cawnpore ...	856	7	2	32	31	36	39	54	34	9	13	13	14	284	...	1	...
Allahabad ...	985	26	15	13	29	31	33	37	24	42	90	48	40	428	...	4	...
	8,251	77	52	100	200	182	241	246	203	226	319	139	108	2,093	253·8	13	1·58
Shahjehanpore ...	380	3	2	5	9	7	5	15	6	11	11	1	10	85	...	2	...
Bareilly ...	758	12	9	10	28	14	28	29	13	14	18	8	8	191	...	...	...
Moradabad ...	205	2	2	1	3	6	5	2	3	5	5	4	1	39	...	1	...
Roorkee ...	432	3	8	17	4	13	17	12	12	25	30	7	6	154	...	2	...
Meerut ..	1,441	27	48	38	56	86	76	78	219	134	209	58	21	1,050	...	4	...
Delhi ...	543	5	5	12	30	33	21	37	80	94	167	60	29	573	...	2	...
Muttra (10 months) ...	432	12	4	8	13	3	5	12	14	9	4	...	...	84		...	...
	4,119	64	78	91	143	162	157	185	347	292	444	138	75	2,176	528·3	11	2·67
Agra ...	1,156	17	10	8	26	20	24	25	21	15	20	14	8	208	...	...	...
Morar ...	1,076	86	80	81	52	52	41	52	49	116	55	55	19	738	...	...	...
Gwalior Citadel ...	355	11	20	14	22	22	17	23	13	14	3	8	6	173	...	...	...
Jhansi .	401	85	40	17	18	20	29	38	41	105	168	113	71	748	...	1	...
Nowgong ...	316	25	22	17	17	22	19	26	19	25	21	7	15	235	...	1	...
Saugor ..	456	19	5	5	26	24	19	36	61	99	127	55	27	563	...	...	...
Jubbulpore ...	454	3	..	5	6	4	5	2	8	26	31	21	23	134	...	1	...
	4,213	246	177	147	167	164	154	202	215	400	425	273	169	2,739	650·1	3	·71
Umballa ...	1,380	19	14	11	31	42	38	46	59	178	169	48	10	668	...	1	...
Phillour (5 months) ...	64	..	...	...	.	2	1	...	15	13	...	...	...	31	..	4	...
Jullundur ..	800	5	3	7	23	21	15	16	38	51	32	8	8	222	...	3	...
Ferozepore ..	1,118	6	5	5	36	36	46	39	43	70	57	34	10	390	..	..	...
Mooltan ...	831	6	4	13	9	24	39	40	51	45	98	117	56	502	...	4	...
Dera Ismael Khan ...	99	.	3	..	..	2	2	2	6	18	47	38	29	147	...	1	...
Sealkote ...	1,119	23	20	21	60	30	36	27	32	59	72	38	35	453	...	4	...
Umritsur ..	273	7	2	2	3	14	8	13	36	48	45	33	23	234	..	2	...
Fort Lahore ...	82	3	...	1	7	3	8	13	9	3	44	34	7	132	...	...	...
Meean Meer ...	1,013	12	13	24	34	39	62	50	97	150	308	233	153	1,170	...	1	...
Rawulpindee ...	1,783	64	49	44	51	79	97	64	42	39	41	40	28	628	...	2	...
Campbellpore ...	135	6	1	4	3	9	9	3	3	4	12	7	4	65	...	1	...
Attock ...	180	8	3	...	5	14	10	8	36	40	45	42	55	266	...	...	...
Nowshera ...	693	16	22	14	13	22	34	31	44	86	240	355	222	1,099	...	...	...
Peshawur ...	2,044	36	26	27	33	52	86	106	105	540	785	564	438	2,888	...	4	...
Cherat ...		...	...	...	6	19	10	36	17	27	14	4	...	133	..	...	...
Troops on march, Punjab ..	...	18	2	...	...	...	..	...	...	...	1	36	43	100	...	...	...
Recruits, Invalids, &c., Punjab	...	.	...	6	5	...	...	...	...	...	...	...	...	11	..	...	...
	12,118	219	167	182	319	411	501	404	723	1,371	2,065	1,631	1,116	9,139	754·2	27	2·23
Darjeeling ...	85	1	1	2	2	5	2	1	1	...	...	1	...	16	...	...	...
Raneekhet ...	479	4	1	2	3	8	6	10	1	9	9	5	7	65	...	1	...
Chuckrata ...	772	1	3	9	10	10	15	7	5	3	3	5	8	79	...	...	...
Dugshaie (10 months) ...	940	8	5	2	...	11	7	16	3	9	5	1	5	72	...	1	...
Subathoo (10 months) ...	900	6	4	2	5	6	5	19	11	13	7	1	...	79	...	...	...
Jutogh (9 months) ...	95	...	...	...	1	...	1	1	...	...	...	...	...	3	...	...	...
Kangra (8 months) ...	109	...	...	...	...	...	...	...	1	2	2	1	...	6	...	...	...
Dhurmsalla ...		...	...	...	...	...	...	1	4	3	...	...	...	8	...	...	...
Murree Hills (5 months) ...	668	...	...	...	6	26	6	9	7	6	1	...	...	61	...	...	...
As for 12 Months ...	3,379	20	14	17	27	66	42	64	33	45	27	14	20	389	115·1	2	·59
Darjeeling Depôt (9 months) ...	105	...	...	7	6	8	9	5	6	3	2	...	1	47	...	...	...
Nynee Tal " (9 months) ..	241	3	1	...	4	9	12	14	6	4	9	1	7	70	...	...	...
Landour " (7 months) ...	205	...	...	...	8	10	7	11	10	4	4	...	1	55	...	...	...
Kussowlie " (7 months) ...	656	1	...	...	62	40	40	23	13	12	12	11	13	227	...	2	...
Dalhousie " (7 months) ...	502	...	...	...	20	21	7	4	5	5	2	1	...	65	...	...	...
Murree " (7 months) ...	526	...	...	...	21	13	17	23	15	6	7	2	...	104	...	...	...
For season of Occupation ...	2,325	4	1	7	121	101	92	80	55	34	36	15	22	568	223·7	2	·86

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Troops on march, (Bombay Presidency.)	...	48	12	4	...	...	...	...	...		...	21	23	108	...	...	...
Deolalee Depôt, (Bombay Troops)	...	2	1	...	...	...	1	...	...	1	...	7	3	15	..	...	...
Poona Depôt „	...	3	25	29	1	...	...	...	1	1	1	...	...	61	...	...	...
Colaba Depôt „	22	1	5	9	9	6	3	1	...	1	...	...	...	35	...	...	...
Troops on march (Madras Presidency)	...	5	2	...	...	...	...	...	...	...	...	18	38	63	...	...	...
Poonamallee and Presidency Depôts ...	154	...	1	2	5	1	1	4	4	...	1	1	1	21	...	...	...
Deolalee Depôt (Madras Troops)	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...
Poona and Bombay Depôts (Madras Troops) ...	...	4	22	22	1	...	...	...	...	...	..	..	...	49	...	...	...
Nusseerabad ..	646	10	18	13	34	29	34	48	60	145	205	74	80	750	...	...	...
Neemuch ...	468	8	3	7	10	2	4	8	15	13	122	48	48	288	...	...	...
Indore ...	96	...	...	3	...	2	1	..	3	8	7	4	...	28	...	...	...
Mhow ...	1,432	30	23	28	60	45	29	33	152	349	340	52	15	1,156	...	1	...
Deesa ..	897	9	14	18	19	9	41	25	23	48	454	308	182	1,150	...	3	...
Ahmedabad and Baroda ...	166	18	8	5	6	4	36	18	19	12	18	26	15	185	...	...	...
Kurrachee and Ghizree ...	802	24	14	17	29	25	39	32	38	46	51	70	95	480	...	2	...
Hyderabad ...	377	1	1	7	8	5	14	10	16	22	75	119	76	354	...	...	...
Aden ...	703	3	6	6	6	7	26	30	12	15	7	1	29	148	..	...	...
	5,587	103	87	104	172	128	224	204	338	658	1,279	702	540	4,539	812·4	6	1·07
Bombay ...	443	9	9	15	30	17	11	13	13	8	73	37	28	263	..	2	...
Asseerghur ..	130	5	5	7	...	8	6	5	5	11	18	...	3	73	...	...	...
Ahmednuggur ...	592	23	10	8	20	19	22	18	12	13	19	14	4	182	...	...	...
Poona and Kirkee ..	2,308	52	21	61	79	64	36	60	68	54	75	130	113	822	...	...	...
Sattara ...	187	3	...	...	5	1	1	...	5	4	6	2	5	32	...	...	...
Belgaum ...	1,037	13	10	16	15	12	13	4	4	10	7	15	7	126	...	...	...
Secunderabad ...	2,586	22	32	31	61	82	49	50	54	59	64	57	34	595	...	1	...
Kamptee ...	1,040	23	34	12	40	63	94	31	64	234	383	138	77	1,183	...	6	...
	8,307	150	111	150	250	266	282	181	225	393	645	402	271	3,276	394·4	9	1·08
Bellary ...	812	1	1	40	23	11	8	8	1	3	6	26	25	148	...	1	...
Bangalore ...	1,754	18	16	32	36	17	20	19	8	6	8	10	91	281		...	...
Cannanore ...	747	15	15	10	3	5	5	13	12	8	3	3	8	100	...	...	...
Mallapoorum ...	96	...	...	...	...	...	...	1	...	1	...	...	...	2	.	...	...
Calicut ...	86	...	...	...	...	...	1	1	..	2	...	...	...	4	...	...	..
Trichinopoly ...	311	4	3	2	6	4	2	4	2	7	6	6	4	50	..	...	..
St. Thomas' Mount ...	401	8	12	10	6	2	2	1	1	...	4	1	3	50	...	...	...
Madras ...	742	4	12	16	24	45	14	26	6	20	11	8	...	186	...	...	...
	4,949	50	59	110	99	84	52	68	30	47	38	54	131	821	165·9	1	·20
Rangoon ...	854	8	5	4	2	2	4	4	1	3	5	2	9	49	...	...	...
Toungoo ...	465	3	2	4	2	4	7	14	2	1	1	1	6	47	...	...	...
Thayetmyo ...	569	5	2	2	1	...	4	2	...	1	2	2	4	25	...	...	...
Port Blair ...	110	...	1	...	...	..	6	1	2	...	...	...	...	10	..	..	...
	1,998	16	10	10	5	6	21	21	5	5	8	5	19	131	65·5	.	...
Taraghur, Ajmere (7 months) ...	43	...	...	...	1	1	1	1	5	4	6	3	.	22	...	...	...
Mount Aboo ...	148	19	3	8	5	25	12	36	8	5	54	50	55	280	...	...	...
Poorundhur ...	64	29	7	2	10	1	1	...	...	...	3	1	...	54	...	...	...
Puchmurree, (Madras Troops, 10 months) ...	151	...	...	4	32	28	20	31	15	17	8	16	8	179	...	...	...
Ramandroog ...	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	293	...	1	...	1	4	10	9	4	7	4	2	4	46	...	...	...
AVERAGE FOR THE YEAR ...	685	48	11	14	49	59	44	77	82	53	75	72	67	681	848·2	...	...

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Army of Bengal ...	36,507	709	545	600	1,065	1,135	1,267	1,409	1,692	2,428	3,328	2,300	1,607	18,103	495·9	65	1·78
Army of Madras ...	11,544	120	151	193	243	268	247	214	176	369	506	291	312	3,090	267·7	8	·69
Army of Bombay ...	10,819	310	195	263	347	282	331	342	459	770	1,541	691	781	6,612	611·2	8	·74
Army of India ...	58,870	1,139	891	1,065	1,655	1,685	1,845	1,965	2,327	3,567	5,375	3,591	2,700	27,805	472·3	81	1·38

EUROPEAN TROOPS, 1872.

XXVII.

TABLE showing the PREVALENCE of APOPLEXY and SUNSTROKE in each MONTH and the DISTRIBUTION of these DISEASES by STATIONS and PROVINCES.

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Deolalee Depôt (Bengal Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Poona and Bombay Depôt (Bengal Troops).	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Bengal and N. W. P. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Recruits, Invalids, &c., Bengal and N. W. P. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Fort William ...	828	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	...
Dum-Dum ...	702	...	...	1	...	1	2	...	...	...	...	...	...	4	...	1	...
Barrackpore ...	444	...	...	...	1	1	1	...	1	...	1	...	1	6	...	2	...
	1,974	...	...	1	2	2	3	...	1	1	1	...	1	12	6·1	3	1·52
Hazareebaugh ...	879	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Dinapore ...	820	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Benares ...	493	...	...	...	...	1	1	1	...	...	...	...	...	3	...	2	...
Chunar ...	66	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Fyzabad ...	966	...	...	1	...	1	...	...	...	...	...	...	...	2	...	1	...
Lucknow ...	2,426	...	...	...	...	...	2	...	...	3	...	...	...	5	...	4	...
Seetapore ...	608	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur (8 months) ...	215	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...
Cawnpore ...	856	...	...	...	...	3	18	3	...	...	...	...	...	24	...	6	...
Allahabad ...	985	...	...	...	1	...	2	1	1	...	...	...	...	5	...	1	...
	8,251	...	...	1	1	5	25	5	1	5	...	...	...	43	5·2	15	1·82
Shahjehanpore ...	380	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly ...	758	...	...	...	...	...	2	...	...	...	...	...	...	2	...	...	...
Moradabad ...	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee ...	432	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Meerut ...	1,441	...	...	...	3	1	4	9	6	2	1	1	...	27	...	4	...
Delhi ...	543	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Muttra (10 months) ...	432	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
	4,110	...	1	...	3	1	7	9	6	3	1	1	...	32	7·8	5	1·21
Agra ...	1,156	...	...	...	...	1	5	...	1	...	...	...	...	7	...	2	...
Morar ...	1,076	...	...	...	...	...	...	1	...	1	...	...	...	2	...	2	...
Gwalior Citadel ...	355	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Jhansi ...	401	...	...	...	...	...	2	...	...	...	...	...	...	2	...	1	...
Nowgong ...	315	...	...	...	...	...	2	...	...	...	...	...	...	2	...	1	...
Saugor ...	456	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore ...	454	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...
	4,213	...	...	...	...	1	10	1	1	1	...	1	...	15	3·6	6	1·41
Umballa ...	1,380	...	...	...	...	1	1	...	1	1	1	...	...	5	...	2	...
Phillour (5 months) ...	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ...	800	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Ferozepore ...	1,118	...	...	...	...	...	12	...	...	...	...	...	...	12	...	3	...
Mooltan ...	831	...	...	...	...	...	2	1	2	...	...	...	...	5	...	1	...
Dera Ismael Khan ...	99	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote ...	1,110	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...
Umritsur ...	273	...	...	...	...	...	1	...	...	...	...	...	...	1	...	2	...
Fort Lahore ...	82	...	...	...	...	...	1	1	...	...	...	...	...	2	...	2	...
Meean Meer ...	1,013	...	...	...	...	...	3	2	9	...	...	1	...	15	...	6	...
Rawulpindee ...	1,783	...	...	1	...	...	2	...	...	...	...	...	...	3	...	3	...
Cambellpore ...	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock ...	180	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
Nowshera ...	693	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Peshawur ...	2,044	...	...	...	1	...	2	1	...	1	...	...	...	4	...	2	...
Cherat ...														1	...	...	...
Troops on march, Punjab ...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Recruits, Invalids, &c., Punjab...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	12,118	...	...	2	1	1	27	5	12	3	1	1	...	53	4·4	25	2·06
Darjeeling ...	85	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...
Raneekhet ...	479	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata ...	772	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dugshaie (10 months) ...	940	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subathoo (10 months) ...	900	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jutogh (9 months) ...	95	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra (8 months) ...	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla ...																	
Murree Hills (5 months) ...	668	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AS FOR 12 MONTHS ...	3,379	...	...	...	...	...	...	...	...	...	1	...	...	1	·3	...	...
Darjeeling Depôt (9 months) ...	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal „ (9 months) ...	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour „ (7 months) ...	205	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Kussowlie „ (7 months) ...	656	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie „ (7 months) ...	502	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree „ (7 months) ...	528	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
FOR SEASON OF OCCUPATION ..	2,325	...	...	...	...	...	...	1	...	...	...	...	...	1	·4	1	·43

STATIONS.	Average Strength for the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Troops on march, (Bombay Presidency) ...	...	1	3	1	...	...	...	...	...	...	...	...	...	5	...	1	...
Deolalee Depôt, (Bombay Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona " "	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba " "	22	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Troops on march, (Madras Presidency) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts ...	154	...	...	...	...	1	...	...	...	...	1	...	...	2	...	2	...
Deolalee Depot, (Madras Troops)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts, (Madras Troops) ...	...	.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	646	...	...	...	...	...	5	...	...	...	...	...	...	5	...	2	...
Neemuch ...	468	...	...	...	...	...	1	...	...	...	1	...	...	2	...	2	...
Indore ...	96	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Mhow ...	1,432	...	...	...	...	...	4	...	...	...	...	1	...	5	...	3	...
Deesa ...	897	...	...	...	...	1	4	2	...	...	1	...	...	8	...	6	...
Ahmedabad and Baroda ...	166	...	...	...	...	...	5	...	...	...	...	...	...	5	...	2	...
Kurrachee and Ghizree ...	802	...	...	...	...	...	3	...	...	...	...	...	...	3	...	3	...
Hyderabad ...	377	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Aden ...	703	...	...	...	...	2	2	3	2	2	1	...	...	12	...	4	...
	5,587	...	...	...	...	4	25	5	2	2	3	1	...	42	7·5	22	3·94
Bombay ...	443	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Asseerghur ...	130	...	...	...	...	...	1	..	...	...	...	...	...	1	...	1	...
Ahmednuggur ...	592	...	...	...	...	2	1	1	...	...	...	...	...	4	...	3	...
Poona and Kirkee ...	2,308	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sattara ...	187	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum ...	1,037	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad ...	2,586	1	...	1	4	8	4	1	...	...	...	...	...	19	...	8	...
Kamptee ...	1,040	...	...	...	1	3	7	1	...	...	...	1	...	13	...	4	...
	8,307	1	...	1	5	13	13	3	...	...	...	1	...	37	4·5	16	1·93
Bellary ...	812	...	...	...	...	2	...	...	...	...	...	...	...	2	...	2	...
Bangalore ...	1,754	...	1	1	1	...	...	...	...	...	...	...	2	5	...	3	...
Cannanore ...	747	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...
Malliapoorum ...	96	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut ...	86	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly ...	311	...	...	...	...	...	1	...	...	...	1	...	...	2	...	...	...
St. Thomas' Mount ...	401	...	...	...	1	3	...	...	...	...	...	...	...	4	...	1	...
Madras ...	712	..	...	1	1	1	1	2	...	...	...	...	...	6	...	4	...
	4,949	...	1	2	3	6	2	2	1	...	1	...	2	20	4·0	11	2·22
Rangoon ...	854	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...
Toungoo ...	465	...	...	...	1	...	...	...	...	...	..	..	...	1	...	1	...
Thayetmyo ...	589	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
	1,998	...	...	...	1	...	...	...	1	..	...	...	...	2	1·0	2	1·00
Taraghur, Ajmere ...	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo ...	148	...	...	1	...	...	...	...	1	..	...	...	...	2	...	1	...
Poorundhur ...	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puchmurree (Madras Troops, 10 months) ...	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	293	...	...	...	...	...	...	...	...	..	..	...	...	...	..	1	...
AVERAGE FOR THE YEAR ...	685	...	...	1	...	...	...	...	1	..	..	...	...	2	2·9	2	2·92

ARMIES.	Average Strength.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Number of Deaths.	Death-rate per 1,000 of Strength
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Army of Bengal ...	36,507	...	1	4	7	10	72	21	21	13	4	3	1	157	4·3	58	1·5
Army of Madras ...	11,544	1	1	3	9	18	13	4	2	...	2	1	2	56	4·8	28	2·4
Army of Bombay ...	10,819	1	4	2	...	6	27	6	3	2	3	1	...	55	5·1	28	2·5
Army of India ...	58,870	2	6	9	10	34	112	31	26	15	9	5	3	268	4·5	114	1·9

EUROPEAN TROOPS, 1872.

XXVIII.

TABLE showing in DETAIL the CAUSES of DEATH in the ARMIES of the THREE PRESIDENCIES.

TOTAL LOSS OF THE ARMY OF INDIA BY DEATH 1,425. PER 1,000 OF AVERAGE STRENGTH 24·21.

CAUSES OF DEATHS.	BENGAL.		MADRAS.		BOMBAY.		ARMY OF INDIA.		
	Deaths in Hospital.	Deaths out of Hospital.	Deaths in Hospital.	Deaths out of Hospital.	Deaths in Hospital.	Deaths out of Hospital.	Deaths in Hospital.	Deaths out of Hospital.	Died per 1,000 of the Average Strength.
Cholera	389	...	2	...	36	...	427	...	7·25
Smallpox	7	...	2	..	2	...	11	...	·19
Scarlet Fever	1	...	...	...	...	...	1	...	
Diphtheria	1	...	...	...	...	...	1	...	
Hydrophobia	2	...	...	...	...	...	2	...	
Erysipelas	5	...	1	...	1	...	7	...	
Pyæmia	...	...	1	...	...	...	1	...	
Enteric Fever	59	...	27	...	24	...	110	...	1·87
Intermittent Fever	4	...	...	...	2	...	6	...	1·38
Remittent and Continued Fevers ...	61	..	8	...	6	...	75	...	
Acute Rheumatism	1	...	...	...	...	...	1	...	
Secondary Syphilis	1	...	3	...	2	...	6	..	
Cancer of Pylorus	1	...	1	...	1	...	3	...	
„ of Mesentery	1	...	...	...	1	...	2	...	
„ General Medullary	...	...	1	...	...	...	1	...	
Phthisis Pulmonalis	36	...	19	...	18	...	73	...	1·24
Psoas Abscess	2	...	...	...	...	...	2	...	
Tuberculosis Mesenterica	1	...	...	...	...	...	1	...	
Abscess of Mesentery	...	...	1	...	...	...	1	...	
Scurvy	1	...	...	...	1	...	2	...	·03
Meningitis	8	...	1	...	...	...	9	...	
Encephalitis, Abscess	2	...	3	...	...	...	5	...	
„ Softening	2	...	...	...	...	...	2	...	
„ breaking down of Syphilitic deposit...	...	...	...	...	1	...	1	...	
Hemiplegia	1	...	...	...	...	...	1	...	
Acute Mania	1	...	...	...	...	...	1	...	
Epilepsy	...	...	...	...	1	...	1	...	
Tetanus	4	...	...	...	...	...	4*	...	
Apoplexy, Heat	56	...	26	...	27	...	109	...	1·93
„ Sanguineous	2	...	2	...	1	...	5	...	
Disease of Mastoid Cells	1	...	...	...	...	...	1	...	1·28
Valve Disease of the Heart	12	...	10	...	4	...	26	...	
Hypertrophy „	4	...	4	...	1	...	9	...	
Fatty Heart	2	...	2	...	...	...	4	...	
Embolism	1	...	...	...	...	...	1	...	
Embolism of Femoral Artery	...	...	...	...	1	...	1	...	
Rupture of Auricle	1	...	...	...	...	...	1	...	
„ of Vena Cava	...	...	...	...	1	...	1	...	
Aortic Aneurism	21	...	8	...	4	...	33	...	
Pericarditis	1	...	...	...	...	...	1	...	
Bronchitis	5	...	...	...	1	...	6	...	·95
Pneumonia	35	...	...	...	4	...	39	...	
Gangrene of Lung	2	...	...	...	2	...	4	...	
Pleurisy	2	...	...	...	...	...	2	...	
Laryngitis	3	...	1	...	...	...	4	...	
Enteritis ...	1	...	...	...	...	...	1	...	
Œdema Glottidis	6	...	...	...	1	...	7	...	
Peritonitis	3	...	2	...	1	...	6	...	
Cirrhosis	10	...	2	...	5	...	17	...	
Dysentery	64	...	32	...	13	...	109	...	1·85
Diarrhœa	10	...	...	...	...	...	10	...	·17
Hepatitis	86	...	38	...	20	...	144	...	2·45
Spleen Disease	1	...	...	...	...	...	1	...	·02
Nephria	3	...	3	...	2	...	8	...	
Diabetes	1	...	...	...	...	...	1	...	
Calculus of Bladder	1	...	...	...	...	...	1	...	
Sloughing of Scrotum	1	...	...	...	...	...	1	...	
Stricture of Urethra	1	...	...	...	...	...	1	...	
Iliac Abscess	1	...	1	...	...	...	2	...	
Lumbar Abscess	1	...	...	...	...	...	1	...	
Carbuncle	1	...	...	...	...	...	1	...	
Anæmia and Debility	3	...	...	...	...	...	3	...	·05
Delirium Tremens	5	...	4	...	2	...	11	...	·19
Accidents	1	10	...	2	1	3	2	15	1·07
„ Fracture of Lumbar Vertebræ ...	1	...	...	...	...	...	1	...	
„ „ Cervical „ ...	1	...	...	...	...	...	1	...	
Drowned	...	15	...	8	...	6	...	29	
Died while drunk	...	9	...	...	...	1	...	10	
Suffocated	...	1	...	...	...	...	...	1	
Murder and Homicide	1	2	1	...	...	...	2	2	
Suicide by Gunshot	1	18	...	1	...	4	1	23	·56
„ Drowning	...	2	...	...	...	...	...	2	
„ Cut Throat	...	1	...	...	...	2	...	3	
„ Hanging	...	...	...	...	...	1	...	1	
„ Corrosive Sublimate ...	...	1	...	...	...	...	...	1	
„ Cyanide of Potassium ...	...	...	...	1	...	...	...	1	
Executed	...	...	...	1	...	...	...	1	
Ratio per 1,000 for Deaths from Causes not specially calculated	...	...	...	...	...	...	...	...	1·78
	943	59	206	13	187	17	1,336	89	24·21

* With one exception, these deaths followed the subcutaneous injection of quinine during fever.

EUROPEAN TROOPS, 1872.

XXIX.

TABLE showing in DETAIL the CAUSES of INVALIDING during 1872.

All Invaliding up to the date of sailing of the last Troopship in the beginning of April 1873, is included. The Invalids who left India in the early months of 1872 have been already shown in the Invaliding Tables of 1871.

ARMY OF BENGAL—Number Invalided...	1,581	Invalided per 1,000 of Strength	43·73*
ARMY OF MADRAS „	419	„	41·96*
ARMY OF BOMBAY „	438	„	42·46*
ARMY OF INDIA „	2,438	„	43·21*

CAUSES OF INVALIDING.	BENGAL.			MADRAS.			BOMBAY.			ARMY OF INDIA.		
	For Change.	For Discharge.	Per 1,000 of Strength.	For Change.	For Discharge.	Per 1,000 of Strength.	For Change.	For Discharge.	Per 1,000 of Strength.	For Change.	For Discharge.	Per 1,000 of Strength.
Intermittent and Remittent Fevers	40	2	1·17	6	...	·68	26	...	2·60	72	2	1·35
Enteric Fever ...	...	...	...	1	...	...	...	...	...	1	...	...
Rheumatism ...	67	29	2·66	12	3	1·58	12	4	1·40	91	36	2·26
Secondary Syphilis ...	42	25	1·83	17	5	2·26	14	4	1·60	73	34	1·88
Phthisis Pulmonalis ...	59	103	4·47	16	29	4·19	29	20	4·89	104	152	4·50
Scrofula ...	5	1	...	1	...	...	2	...	...	8	1	
Caries of Spine ...	...	1	...	...	...	...	...	...	...	...	1	
Scurvy ...	1	...	...	...	...	...	...	...	...	1	...	
Anæmia ...	52	3	...	...	...	...	40	...	...	92	3	
Lupus ...	1	...	...	...	...	...	...	1	...	1	1	
General Dropsy ...	1	...	...	...	...	...	...	...	...	1	...	
Meningitis ...	3	2	...	...	...	...	1	...	...	4	2	
Encephalitis ...	2	2	...	...	...	...	1	...	...	3	2	
Sunstroke ...	7	1	·22	3	...	·34	3	...	·30	13	1	·26
Paralysis ...	9	10	...	5	3	..	3	5	...	17	18	
„ hemiplegia 8 ...	...	...	...	...	...	..	...	...	...	...	...	
„ paraplegia 8 ...	...	...	...	...	...	...	...	...	...	...	...	
„ local 2 ...	...	...	..	..	...	...	...	...	...	...	...	
„ locomotor ataxy 6 ...	...	...	...	...	...	...	...	...	...	...	..	
„ character not stated 11 ...	...	..	...	..	...	.	...	...	...	...	...	
Epilepsy ...	2	21	·64	...	7	·68	...	5	·50	2	33	·62
Chorea ...	1	...	...	...	..	...	...	...	...	1	...	
Paralysis agitans ...	...	2	...	...	...	.	...	..	...	...	2	
Mania ..	4	7	1·17	2	3	1·13	..	1	1·10	6	11	1·15
Melancholia ...	2	11		1	...		...	1		3	12	
Dementia ...	6	12		1	5		1	8		8	25	
Neuralgia ..	7	3	...	1	...	...	...	...	...	8	3	
Ophthalmia ...	8	4	·60	...	...	·45	4	1	1·00	12	5	·69
Defective Vision ...	4	8		4	...		2	4		10	12	
Disease of Mastoid Cells ...	...	...	...	...	..	...	1	...	...	1	...	
Otitis ...	2	1	...	...	...	...	...	...	...	2	1	
Deafness ...	4	7	...	...	6	...	1	2	..	5	15	
Valve disease of Heart ...	15	42	2·55	5	11	2·40	...	7	1·20	20	60	2·28
Hypertrophy of Heart ...	10	14		8	3		2	1		15	18	
Fatty Heart ...	1	...		...	...		...	...		1	...	
Aneurism, thoracic aorta ...	...	3		...	1		1	...		1	4	
„ abdominal aorta .	1	5		...	2		...	1		1	8	
„ carotid ...	1	...		...	...		...	...		1	...	
Angina pectoris ...	1	...	...	...	...	...	...	...	...	1	...	
Palpitation ...	62	15	2·14	8	2	1·13	9	2	1·10	79	19	1·78
Varix ...	5	12	...	..	4	...	2	2	...	7	18	
Laryngitis ...	...	...	1·58	...	...	·90	...	...	1·20	...	...	1·40
Bronchitis ...	31	10		7	...		8	1		46	11	
Asthma ..	3	7		2	1		2	...		7	8	
Pleurisy ...	...	...		...	...		...	1		...	1	
Pneumonia ...	4	2		...	1		...	...		4	3	
Dyspepsia ...	7	2	...	4	1	...	3	...	...	14	3	
Hæmatemesis ...	...	...	...	...	...	...	1	...	...	1	...	
Dysentery ..	49	3	2·14	64	2	6·56	20	...	2·10	133	5	2·85
Diarrhœa ...	24	2		9	1		3	..		36	3	
Spleen disease ...	23	1	·66	2	1	·31	1	...	·10	26	2	·51
Hepatitis ...	226	17	6·77	40	4	4·07	55	2	5·59	321	23	6·25
Jaundice ...	1	...	...	...	...	...	...	...	...	1	...	
Cirrhosis ...	2	...	..	...	..	...	...	...	...	2	...	
Ascites ...	...	...	...	1	..	...	...	...	...	1	...	
Fistula in ano ...	1	1	...	...	1	..	1	1	...	2	3	
Hæmorrhoids ...	...	...	..	1	...	...	1	...	...	2	...	
Pericœcal abscess ...	...	...	...	1	..	..	...	...	...	1	...	
Hernia ...	1	4	...	...	4	...	...	3	...	1	11	
Tapeworm ...	1	...	...	...	...	...	...	...	...	1	...	
Nephritis ...	8	6	...	...	...	...	3	3	...	11	9	
Cystitis ...	1	...	...	...	...	...	...	1	...	1	1	
Enuresis ...	...	1	..	...	...	...	1	...	..	1	1	
Diabetes ...	...	...	...	1	...	...	1	...	...	2	...	
Stricture of urethra ...	9	5	...	2	...	..	...	...	...	11	5	
Orchitis ...	4	2	...	...	...	..	...	...	...	4	2	
Synovitis ...	4	...	·47	2	1	1·02	2	...	·70	8	1	·60
Periostitis ...	2	1		1	1		..	...		3	2	
Caries ...	...	1		1	...		...	...		1	1	
Necrosis ...	...	1		...	...		3	...		3	1	
Muscular Atrophy ...	1	...		...	...		...	...		1	...	
Spinal Deformity ...	...	...		...	1		...	...		...	1	
Contraction ...	1	6		...	3		.	2		1	11	
Abscess ...	4	1	·53	...	...	...	...	...	·30	4	1	·40
Ulcer ...	10	4		...	...		3	1		13	5	
Skin diseases ...	1	...	...	...	...	...	...	...	...	1	...	
Tumour ...	1	1	...	1	...	...	...	...	..	2	1	
Guinea worm ...	...	...	...	...	...	...	1	...	..	1	...	
General debility ...	240	45	9·40	70	8	8·26	74	5	11·69	384	58	9·65
Drunkenness ...	...	1	...	.	...	...	...	...	...	...	1	
Injuries, fracture ...	4	6	·75	...	6	1·02	...	3	1·20	4	15	·87
„ dislocation ...	1	2		...	1		...	1		1	4	
„ sprain ...	1	1		...	...		1	2		2	2	
„ wounds and accidents ...	3	5		2	...		3	1		7	7	
„ amputation ...	...	4		...	...		...	..		...	5	
„ concussion of brain ...	...	1		...	...		...	...		...	1	
Causes not ascertained ...	...	...	...	1	...	...	...	...	...	1	...	
Ratio per 1,000 for Invaliding from causes not specially calculated ...	...	...	3·92		...	3·90	...	..	3·89	..	...	3·93
TOTAL ...	1,092	489	43·73	298	121	41·96	341	97	42·48	1,731	707	43·21

---

* These Ratios are calculated after deducting the Strength and Invaliding of the Corps which went to England at the close of 1872, and took with them the men who would otherwise have been invalided for change

EUROPEAN TROOPS, 1872.

XXX.

STATEMENT showing the GAIN and LOSS in STRENGTH of the REGIMENTS composing the ARMY of INDIA during 1872.

A.—GAIN AND LOSS OF THE DIFFERENT ARMS.

		Artillery, Sappers and Miners.	Cavalry.	Infantry.	Army of India.
Strength at the beginning of the Year.					
At Head Quarters and on Detachment at the beginning of 1872 ...		10,421	3,671	41,851	55,943
Recruits from England in India on march to join		28	...	115	143
On Staff employment		15	11	56	82
In Military and other Prisons		44	14	270	328
Elsewhere, Sick in other Hospitals, and Men remaining at Convalescent Depôts		241	131	1,169	1,541
Total Strength in India at the beginning of 1872		10,749	3,827	43,461	58,037
Additions during the Year.					
Transfers received from other Regiments		890	13	166	1,069
Transferred from Regiments leaving India by Volunteering		46	43	503	592
Recruited in India	New Soldiers	24	8	70	102
	Time-expired men	12	...	...	12
Received from England, landed after 1st January	Recruits	1,009	403	2,528	3,940
	Invalids recovered	9	16	285	310
Deserters rejoined		3	2	16	21
Total Additions of the Year		1,993	485	3,568	6,046
Loss during the Year.					
Transfers given to other Regiments		1,023	60	720	1,803
Time-expired Men who have left the Service		134	59	376	569
Men who have purchased their discharge...		8	13	43	64
Men discharged otherwise		10	...	...	10
Invalided ...	For discharge	158	46	497	701
	For change of climate	457	137	1,125	1,719
Dismissed by Sentence of Court Martial ...		12	...	49	61
Deserted		14	4	74	92
Died at Head Quarters and on Detachment		237	104	931	1,272
Died absent from the Regiment	At Convalescent Depôts	7	6	59	72
	In other Hospitals ...	11	3	38	52
Total Loss of the Year		2,071	432	3,912	6,415
Strength remaining towards the close of 1872		10,671	3,880	43,117	57,668

ABSTRACT.

	Artillery.	Cavalry.	Infantry.	Army of India.
Remained at the beginning of 1872 ...	10,749	3,827	43,461	58,037
Added during 1872	1,993	485	3,568	6,046
Total	12,742	4,312	47,029	64,083
Deduct Loss during 1872	2,071	432	3,912	6,415
Remain towards the close of 1872	10,671	3,880	43,117	57,668

B.—GAIN AND LOSS OF THE ARMY OF EACH PRESIDENCY.

	Army of Bengal.	Army of Madras.	Army of Bombay.	Army of India.
Strength at the beginning of the Year.				
At Head Quarters and on Detachment at the beginning of 1872	34,643	10,776	10,524	55,943
Recruits from England in India on march to join	66	...	77	143
On Staff employment	63	9	10	82
In Military and other Prisons	175	83	70	328
Elsewhere, Sick in other Hospitals, and Men remaining at Convalescent Depôts ...	881	468	192	1,541
Total Strength in India at the beginning of 1872 ...	35,828	11,336	10,873	58,037
Additions during the Year.				
Transfers received from other Regiments	623	188	258	1,069
Transferred from Regiments leaving India by Volunteering	304	124	164	592
Recruited in India ... ... New Soldiers ...	48	30	24	102
Recruited in India ... ... Time-expired Men...	5	7	...	12
Received from England, landed after 1st January ... ... Recruits ...	2,894	484	562	3,940
Received from England, landed after 1st January ... ... Invalids recovered...	172	129	9	310
Deserters rejoined	12	6	3	21
Total Additions of the Year ...	4,058	968	1,020	6,046
Loss during the Year.				
Transfers given to other Regiments	642	820	341	1,803
Time-expired Men who have left the Service	374	116	79	569
Men who have purchased their discharge	38	7	19	64
Men discharged otherwise	10	...	...	10
Invalided ... ... For discharge	492	112	97	701
Invalided ... ... For change of climate ...	1,089	290	340	1,719
Dismissed by Sentence of Court Martial	39	3	19	61
Deserted	59	14	19	92
Died at Head Quarters and on Detachment	899	179	194	1,272
Died absent from the Regiment ... ... At Convalescent Depôts ...	63	3	6	72
Died absent from the Regiment ... ... In other Hospitals ...	23	29	...	52
Total Loss of the Year ...	3,728	1,573	1,114	6,415
Strength remaining towards the close of 1872*	36,158	10,731	10,779	57,668

ABSTRACT.

	Bengal.	Madras.	Bombay.	Army of India.
Remained at the beginning of 1872	35,828	11,336	10,873	58,037
Added during 1872	4,058	968	1,020	6,046
Total ...	39,886	12,304	11,893	64,083
Deduct Loss during 1872	3,728	1,573	1,114	6,415
Remain towards the close of 1872 ...	36,158	10,731	10,779	57,668

---

* This Statement has reference only to those regiments and batteries which have spent the year 1872 in India. The strength shown here as remaining, is the strength these corps, and not of the Army, which, as the rule, is reinforced from home before the end of the year.

EUROPEAN

X

ABSTRACT of the RETURNS showing the ADMISSIONS, DEATHS, and

This Table does not include the Statistics of Regiments present for short fragmentary periods. Hence the Totals of the Strength, Admissions and Deaths
Month, and therefore afford a complete record. It is also to be noted, that the figures of this Table must not be regarded as exhibiting with accuracy
on the Regimental Rolls who are in India,

1.—*REGIMENTS of*

	REGIMENTS & BATTERIES, & STATIONS OF 1872.	YEAR OF ARRIVAL.		Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Average Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
1	1-14th Regiment, Fort William	1868	1868	November 1871, from Cawnpore ...	853	1803·0	15·24	52·75
2	XIII Brig., 2 Battery, R. Art., Fort William ...	1871	1871	November 1871, from England ...	86	2511·6	11·63	139·54
3	107th Regiment, Dum-Dum, with Detachment of 180 men at Barrackpore	...	...	November 1870, from Hazareebaugh ...	871	1528·1	22·96	60·85
4	VIII Brig., F. Battery, R. Art., Barrackpore ...	1868	1868	February 1871, from Seetapore ...	129	2302·3	15·50	69·77
5	XVI Brig., B. Battery, R. Art., Barrackpore ...	...	...	January 1870, from Meerut	142	2471·8	35·21	42·25
				REGIMENTS OF BENGAL PROPER ...	2,081	1793·9	19·70	60·07

2.—*REGIMENTS OF BEHAR,*

	REGIMENTS & BATTERIES, & STATIONS OF 1872.	In India.	In the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Average Strength.	By Deaths.	By Invaliding.
1	63rd Regiment, Hazareebaugh	1870	1870	December 1870, from England ...	920	1116·3	6·52	27·17
2	96th Regiment, Dinapore, with Detachment of 66 men at Chunar	1866	1869	November 1870, from Dum-Dum ...	825	1792·7	23·03	40·00
3	VIII Brig., B. Battery, R. Art., Dinapore	1866	1866	December 1869, from Lucknow ...	123	2170·7	48·78	97·56
4	1-3rd Regiment, Wing, Benares	1867	1867	November 1870, from Dugshaie ...	404	1373·8	14·85	...†
5	VIII Brig., D. Battery, R. Art., Benares	1866	1866	March 1872, from Jubbulpore ...	129	1596·9	31·01	54·26
6	26th Regiment, Fyzabad	1865	1868	January 1870, from Fort William ...	858	850·8	37·30	57·11
7	XVI Brig., E. Battery, R. Art., Fyzabad	...	...	February 1871, from Saugor	139	1158·3	57·55	50·36
8	F. Brigade, A. Battery, R. H. Art., Lucknow ...	...	...	March 1872, from Benares ...	148	2148·7	81·08	67·57
9	VIII Brig., C. Battery, R. Art., Lucknow	1866	1866	February 1870, from Morar	126	1888·9	15·87	71·43
10	XXIV Brig.,* 6 Battery, R. Art., Lucknow	...	...	February 1872, from Attock	103	2184·5	29·12	...
11	21st Hussars, Lucknow	...	...	December 1869, from Umballa ...	433	2009·2	20·79	71·59
12	1-17th Regiment, Lucknow	1870	1870	February 1870, from England ...	919	1438·5	22·85	53·32
13	62nd Regiment, Lucknow	1869	1869	February 1869, from England ...	827	876·7	15·72	60·79
14	1-3rd Regiment, Head Quarters, Seetapore ...	1867	1867	November 1870, from Dugshaie ...	480	856·3	10·42	48·84†

* XXIII Brigade from September.

† For the Regiment as a body.

XXI.

INVALIDING of each REGIMENT of the ARMY of BENGAL for the YEAR.

lo not correspond with the Totals shown in Tables II and VI—XII, which contain the Strength, Admissions and Deaths of all European Troops in India in each .he relation of Sickness and Mortality to the Localities indicated, since the Regimental Return is designed to include all cases of disease in men borne whether absent or present with the Regiment.

BENGAL PROPER.

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1872.																														
		Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 1,538	2	...	208	1	377	44	42	199	38	...	1	6	17	2	7	12	4	16	18	45	9	55	20	95	6	54	4	9	60	81	106
	Deaths ... 13	1	...	...	...	...	...	...	...	...	...	...	...	3	...	1	...	...	...	1	...	1	...	...	4	...	...	...	...	...	2	...
	Invaliding .. 45	...	...	...	...	...	...	...	...	...	...	...	3	8	...	3	...	...	...	7	1	...	3	2	13	...	...	2	...	...	...	3
2	Admissions 216	...	...	36	1	10	45	9	18	2	...	...	1	5	...	...	...	...	...	3	4	3	7	8	20	1	7	...	2	11	12	11
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding... 12	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	2	...	1	...	...	5	...	...	...	...	...	...	1
3	Admissions 1,331	...	...	281	...	117	211	37	83	7	2	...	19	16	4	8	7	...	7	6	69	4	39	44	62	7	68	2	11	52	107	61
	Deaths ... 20	...	...	...	...	...	4	...	...	...	...	...	1	...	3	1	...	...	...	3	1	1	1	1	1	...	...	...	...	...	2	1
	Invaliding... 53	...	...	...	...	...	...	5	...	...	...	...	10	10	1	2	1	...	...	1	2	1	1	...	9	1	...	1	...	...	...	8
4	Admissions 297	...	...	91	...	20	28	4	10	...	...	...	1	5	4	...	1	...	2	...	8	...	3	23	11	...	17	...	9	13	31	16
	Deaths ... 2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding... 9	...	...	...	...	...	2	...	...	...	...	...	2	2	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
5	Admissions 351	1	...	70	...	35	33	14	10	4	...	...	5	2	1	2	...	...	5	1	7	1	19	38	28	4	16	...	2	14	30	9
	Deaths ... 5	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...
	Invaliding... 6	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	3	...	...	...	...	...	1	...
	Admissions 3,733	3	...	686	2	559	361	106	320	51	2	1	32	45	11	17	20	4	30	28	133	17	123	133	216	18	162	6	33	150	261	203
	Deaths ... 41	2	...	...	...	...	6	...	...	...	...	...	1	3	3	3	...	...	...	4	1	3	2	1	7	...	...	...	...	...	4	1
	Invaliding... 125	...	...	...	...	...	2	5	...	...	...	...	15	24	2	5	1	...	...	11	3	2	5	2	31	1	...	3	...	...	1	12
	BENARES, OUDE, and CAWNPORE.																															
1	Admissions 1,027	...	...	...	7	171	44	27	164	42	...	...	6	23	1	...	8	...	77	10	48	2	26	33	62	7	41	2	17	106	50	53
	Deaths ... 6	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...
	Invaliding... 25	...	...	...	...	...	...	1	...	...	...	...	...	9	...	2	1	...	...	3	...	...	...	...	5	...	...	...	...	...	...	4
2	Admissions 1,479	4	2	378	2	147	82	49	112	49	1	...	27	7	2	2	17	2	35	3	51	8	72	83	63	5	85	2	9	55	53	72
	Deaths ... 19	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...	5	...	...	...	...	...	1	2
	Invaliding... 33	...	...	...	...	...	...	1	...	3	...	...	10	4	...	...	...	...	1	1	4	...	1	...	6	...	...	...	...	...	...	2
3	Admissions 267	1	...	60	...	28	1	15	7	1	...	...	4	...	...	3	...	...	4	...	8	...	5	46	29	...	20	...	5	15	13	2
	Deaths ... 6	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	1	...
	Invaliding... 12	...	...	...	...	...	...	2	...	...	...	...	4	...	...	1	...	...	1	...	...	...	...	...	4	...	...	...	...	...	...	...
4	Admissions 555	1	...	59	...	61	14	18	115	6	2	...	3	...	2	...	2	...	8	5	45	1	11	25	47	2	26	...	8	44	29	21
	Deaths ... 6	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	1	...
	Invaliding... *	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Admissions 206	2	...	28	...	29	7	2	29	3	1	...	1	...	1	1	...	1	3	...	5	2	7	8	16	1	12	...	2	12	24	9
	Deaths ... 4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
	Invaliding .. 7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	2	...	...	...	...	...	1	1
6	Admissions 730	28	...	75	2	119	2	26	126	34	...	...	22	1	2	1	...	1	8	3	30	3	28	21	34	1	17	6	19	62	40	29
	Deaths ... 32	16	...	...	1	...	1	...	...	...	...	...	...	1	1	...	...	...	...	3	...	1	...	...	8	...	...	...	...	...	...	...
	Invaliding... 40	...	...	...	...	...	...	1	...	...	...	...	26	...	...	...	1	...	...	...	1	...	3	...	6	1	...	1	1	2	...	6
7	Admissions 161	11	...	29	...	16	1	9	23	1	2	...	5	...	...	...	...	...	2	4	12	2	1	...	9	...	5	...	3	7	18	1
	Deaths ... 8	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding... 7	...	...	...	...	...	...	1	...	1	...	...	1	1	...	...	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...
8	Admissions 318	12	...	50	1	29	1	15	23	3	...	...	11	1	1	2	3	...	4	2	12	2	7	16	23	...	11	2	4	20	27	30
	Deaths ... 12	6	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	1
	Invaliding... 10	...	...	...	...	...	...	...	...	1	...	...	3	...	...	...	...	...	...	1	...	...	...	...	4	...	...	...	...	...	...	1
9	Admissions 238	2	...	47	...	11	9	24	17	1	1	...	1	4	1	...	6	...	8	...	8	4	4	8	6	1	11	...	...	22	22	20
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding... 9	...	...	...	...	...	...	1	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	2
10	Admissions 225	2	1	...	...	31	55	7	48	2	...	...	7	...	...	...	3	1	...	...	11	1	4	9	7	...	10	1	...	14	9	2
	Deaths ... 3	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	Admissions 870	3	...	204	...	43	72	30	100	6	1	...	5	...	...	1	1	1	11	1	31	1	8	25	20	1	35	...	5	58	90	27
	Deaths ... 9	1	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	2	...	...	...	...	1	2	...
	Invaliding... 31	...	...	...	...	...	...	...	...	1	...	...	17	1	...	...	...	...	...	...	...	...	...	...	3	1	...	1	...	1	...	6
12	Admissions 1,322	13	4	332	4	16	144	35	191	10	1	...	32	17	1	...	5	3	23	3	21	6	29	116	29	...	60	3	19	107	34	64
	Deaths ... 21	10	...	...	2	...	1	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	1	1
	Invaliding... 49	...	...	...	...	...	...	2	...	3	...	...	10	8	...	...	...	...	...	2	1	...	5	1	6	...	...	1	...	...	...	10
13	Admissions 725	5	...	84	3	20	75	17	156	11	...	...	20	10	3	...	1	1	41	1	15	1	23	43	25	...	21	1	11	73	31	33
	Deaths ... 13	4	...	...	1	...	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3	...
	Invaliding... 42	...	...	...	...	...	...	1	...	2	...	...	15	7	...	...	...	...	1	...	...	...	2	1	4	...	...	...	...	1	...	8
14	Admissions 411	...	...	...	2	63	30	25	44	5	...	...	42	1	...	...	...	2	13	3	18	1	19	19	21	1	25	4	3	38	21	22
	Deaths ... 5	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
	Invaliding... 43	...	...	...	...	1	...	2	...	2	...	...	18	...	...	1	...	...	...	4	2	...	1	...	7	...	...	...	...	...	...	5

* See Head Quarters' Ratio.

REGIMENTS of BEHAR,

	REGIMENTS & BATTERIES, & STATIONS OF 1872.	YEAR OF ARRIVAL		Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
15	XVI Brig., A. Battery, R. Art., Seetapore ...	...	...	February 1871, from Barrackpore ...	134	1223·9	22·39	37·31
16	1-8th Regiment, Cawnpore ...	1868	1872	March 1872, from Nusseerabad and Neemuch ...	855	2177·8	38·60	46·78
17	XIX Brig., A. Battery, R. Art., Cawnpore ...	...	...	January 1871, from Jhansi ...	139	2582·7	21·58	50·36
18	2-19th Regiment, Allahabad ...	1863	1869	November 1871, from Fort William ...	825	1600·1	48·48	53·33
19	XIX Brig., E. Battery, R. Art., Allahabad ...	...	...	March 1872, from Rawulpindee ...	148	1844·6	20·27	60·81
20	XXIV Brig.,* 7 Battery, R. Art., Allahabad ...	...	...	January 1870, from Darjeeling ...	91	989·0	10·99	43·96
				REGIMENTS OF BEHAR, BENARES, OUDE, AND CAWNPORE ...	8,626	1401·5	26·55	40·39

3.—*REGIMENTS of*

	REGIMENTS & BATTERIES, & STATIONS OF 1872.	In India.	In the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Strength.	By Deaths.	By Invaliding.
1	2-1st Regiment, Head Quarters, Shahjehanpore ...	1866	1870	January 1870, from Nusseerabad ...	423	922·0	23·64	54·63‡
2	XXIII Brig., E. Battery, R. Art.,† Bareilly ...	...	...	December 1870, from Jubbulpore ...	150	1266·7	6·67	60·00
3	1-5th Regiment, Bareilly ...	1867	1867	February 1872, from Nowshera ...	944	1102·8	11·65	41·31
4	109th Regiment, Head Quarters, Roorkee ...	...	...	December 1870, from Mooltan ...	407	1579·9	24·57	86·29‡
5	Sappers and Miners, Roorkee ...	...	...	... ...	28	404·3	...	...
6	D. Brig., D. Battery, R. H. Art., Meerut (11 months) ...	...	...	March 1870, from Rawulpindee ...	151	1867·5	59·60	72·85
7	F. Brig., E. Battery, R. H. Art., Meerut ...	...	...	February 1872, from Umballa ...	149	2094·0	87·25	40·27
8	XVI Brig., F. Battery, R. Art., Meerut ...	...	...	February 1870, from Dinapore ...	137	2416·1	14·60	43·80
9	XIX Brig., D. Battery, R. Art., Meerut ...	...	...	March 1870, from Mooltan ...	137	2175·2	36·50	73·00
10	4th Hussars, Meerut ...	1868	1868	March 1868, from England ...	442	1486·4	61·09	38·46
11	105th Regiment, Meerut, with Detachment of 214 men at Futtehghur ...	...	...	January 1869, from Dinapore ...	719	1817·8	63·98	41·72
12	XXIV Brig.,* 2 Battery, R. Art., Delhi ...	...	...	February 1872, from Morar ...	102	1970·6	19·61	39·22
13	109th Regiment, Wing, Delhi ...	...	...	December 1870, from Mooltan ...	439	2578·6	29·61	..
14	11th Hussars, Muttra ...	1866	1868	January 1868, from Mhow ...	459	1380·2	10·99	59·34
				REGIMENTS OF ROHILCUND AND MEERUT ...	4,670	1590·0	33·62	60·17

* XXIII Brigade from September.

† G. Battery, 16th Brigade from September 1872.

‡ For the Regiment as a body.

XXXI.—(continued).

BENARES, OUDE, and CAWNPORE,—(continued).

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1872. Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
15	Admissions 164	...	...	...	...	22	39	9	7	1	...	...	6	...	...	3	2	...	2	2	5	...	4	9	9	...	5	...	2	16	15	6
	Deaths ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1
	Invaliding .. 5	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1	...
16	Admissions 1,862	23	...	535	3	272	6	59	282	35	...	...	65	2	17	3	22	3	31	2	33	2	42	72	41	7	59	2	8	71	79	86
	Deaths ... 33	16	...	...	1	...	1	...	...	...	...	...	...	1	6	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	3	3
	Invaliding .. 40	...	...	...	...	...	...	...	...	2	...	...	14	2	...	...	3	...	...	1	...	...	1	1	5	1	...	...	1	1	...	8
17	Admissions 359	3	...	86	...	39	10	7	84	9	...	...	3	...	1	...	2	4	3	3	8	2	4	17	10	2	7	1	...	15	31	8
	Deaths ... 3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding .. 7	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	1	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...
18	Admissions 1,325	43	...	134	3	149	229	34	102	6	...	...	26	10	5	2	5	2	41	2	52	1	37	70	66	9	60	1	13	93	65	59
	Deaths ... 40	24	...	...	2	...	2	...	...	...	...	...	...	1	1	1	...	...	...	1	...	...	5	...	2	...	...	...	...	...	...	1
	Invaliding .. 44	...	...	...	...	...	...	3	...	...	...	...	11	6	...	2	...	...	1	...	3	1	7	...	...	...	...	1	...	1	...	8
19	Admissions 273	...	...	92	...	38	7	5	48	4	1	...	...	...	...	1	1	...	5	...	2	1	4	13	9	2	6	...	3	11	14	6
	Deaths ... 3	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding .. 9	...	...	...	...	1	4	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...
20	Admissions 90	1	...	29	...	19	1	2	2	...	...	...	8	...	...	...	3	...	2	...	2	...	2	6	3	...	2	...	...	2	5	1
	Deaths ... 1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding .. 4	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1
	Admissions 12,807	154	7	2318	27	1313	829	415	1080	229	10	...	294	76	37	19	81	21	321	43	417	40	337	645	520	39	518	25	131	831	670	551
	Deaths ... 220	94	3	...	10	...	14	...	...	...	...	...	...	5	14	2	...	...	...	8	1	6	12	2	33	...	...	1	...	1	15	11
	Invaliding .. 426	...	...	...	...	2	4	17	...	18	...	...	131	40	1	6	6	...	4	17	11	2	22	3	60	3	...	5	2	8	2	62
	ROHILCUND and MEERUT.																															
1	Admissions 390	1	...	...	...	80	10	33	33	1	1	...	5	...	...	2	6	1	8	1	14	1	24	37	17	...	34	2	5	21	22	31
	Deaths ... 10	1	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	1	2
	Invaliding .. 49	...	...	...	...	4	...	1	...	...	...	...	5	4	1	1	1	...	...	6	1	1	1	8	4	...	...	...	...	1	1	9
2	Admissions 190	...	...	...	...	38	...	13	27	3	...	...	2	1	...	2	1	1	3	1	5	...	8	10	20	...	7	3	1	19	18	7
	Deaths ... 1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding .. 9	...	...	...	...	...	...	1	...	...	...	...	2	1	...	...	...	...	...	...	...	...	1	...	2	...	...	1	...	...	...	1
3	Admissions 1,041	1	...	...	1	212	35	57	167	28	3	1	9	4	3	2	10	6	15	6	74	7	31	54	40	14	25	...	12	66	73	85
	Deaths .. 11	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	3	2	...	1	...	...	...	...	...	3	1
	Invaliding .. 39	...	...	...	...	3	1	3	...	4	...	...	...	4	...	...	...	...	1	4	3	...	2	...	7	2	...	1	...	2	...	2
4	Admissions 643	5	2	2	...	141	22	63	65	10	...	...	15	3	1	1	3	3	21	...	32	5	17	35	43	4	38	4	8	48	23	20
	Deaths ... 10	3	...	...	...	...	2	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	...
	Invaliding .. 73	...	...	...	...	...	...	19	...	...	...	...	15	1	...	2	...	...	1	1	3	...	2	1	12	...	...	1	...	2	...	13
5	Admissions 13	...	...	1	...	2	...	1	...	...	...	...	...	...	[illegible]	1	1	...	...	...	1	...	...	...	...	...	4	...	...	2	...	...
	Deaths ... 3*	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Admissions 282	9	...	25	...	54	40	3	19	8	1	...	1	2	...	...	...	...	2	2	11	...	11	30	6	5	8	...	1	18	17	9
	Deaths ... 9	7	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Admissions 312	13	...	25	2	118	13	2	21	4	...	...	2	...	1	...	1	4	2	1	14	2	2	17	9	1	18	1	...	15	16	8
	Deaths ... 13	7	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	1	...	...
	Invaliding .. 6	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
8	Admissions 331	...	...	21	2	137	16	21	9	2	...	...	3	...	...	2	1	...	3	...	12	...	5	12	11	...	17	...	1	26	18	[illegible]
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding .. 6	...	...	...	...	...	...	3	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
9	Admissions 298	7	...	11	...	113	7	9	24	...	...	...	11	...	...	...	2	1	...	2	15	2	5	14	5	...	32	1	4	20	12	1
	Deaths ... 5	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding .. 10	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	1
10	Admissions 657	4	...	8	2	24	96	30	22	8	2	...	13	4	25	8	4	...	3	1	86	88	31	13	3	26	25	1	6	40	50	34
	Deaths ... 27	4	...	...	1	...	4	...	...	...	...	...	...	1	2	2	...	...	...	...	1	3	5	1	1	...	...	...	...	...	...	2
	Invaliding .. 17	...	...	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	1	...	5	...	1	5	...	...	...	1	1	...
11	Admissions 1,307	83	...	13	...	598	20	41	69	24	3	1	31	9	3	...	12	5	13	2	38	15	52	67	49	2	49	5	8	63	54	25
	Deaths ... 46	24	...	...	...	...	...	...	...	...	...	1	...	1	4	...	...	1	...	1	...	6	2	...	5	...	...	...	...	...	1	...
	Invaliding .. 30	...	...	...	...	...	...	1	...	1	...	...	12	1	...	...	...	...	1	...	...	...	3	1	3	...	...	2	...	...	...	5
12	Admissions 201	...	...	39	1	62	7	8	11	...	...	...	2	1	1	6	...	3	...	...	4	...	10	11	12	2	9	...	1	3	7	2
	Deaths ... 2	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding .. 4	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
13	Admissions 1,132	...	...	117	...	389	123	51	80	10	2	...	13	4	...	6	1	3	8	7	27	7	20	55	33	1	50	1	8	45	32	33
	Deaths ... 13	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	2	...	1	2	...	1	...	...	1	...	...	2	1
	Invaliding .. ... †	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	Admissions 628	...	...	187	3	73	11	22	63	9	1	...	6	...	1	3	1	1	6	1	19	1	17	19	33	2	14	3	15	58	35	24
	Deaths ... 5	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	1	...	...	...	...
	Invaliding .. 27	...	...	...	...	...	...	4	...	3	...	...	1	1	...	1	...	...	...	2	2	...	...	...	3	...	...	2	2	...	1	5
	Admissions 7,425	73	2	449	11	2041	400	354	616	107	13	5	113	28	35	33	43	28	84	24	352	128	233	374	281	57	330	21	70	443	377	300
	Deaths ... 157	51	...	...	7	...	10	...	...	1	1	1	...	6	8	3	...	3	...	5	3	13	12	3	11	...	...	3	...	2	7	7
	Invaliding .. 270	...	...	...	...	9	2	32	...	8	...	...	47	12	1	6	1	...	3	13	11	1	14	10	35	7	...	7	2	6	5	39

* Two of these deaths occurred among men on detached duty.

† With Head Quarters.

4.—*REGIMENTS of AGRA*

	REGIMENTS & BATTERIES, & STATIONS OF 1872.	YEAR OF ARRIVAL		Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
1	65th Regiment, Agra ...	1871	1871	February 1871, from England ...	944	1018·0	29·66	16·95
2	XIX Brig., F. Battery, R. Art., Agra ...	...	...	January 1870, from Meean Meer ...	145	1855·2	13·79	68·97
3	XXIV Brig.,* 5 Battery, R. Art., Agra ...	...	...	December 1871, from Meean Meer ...	93	1408·6	10·75	64·52
4	F. Brig., B. Battery, R. H. Art., Morar ...	...	...	January 1870, from Sealkote ...	153	1915·0	26·14	71·90
5	XVI Brig., C. Battery, R. Art., Morar ...	...	...	March 1870, from Barrackpore ...	140	1542·8	7·14	57·14
6	XXIV Brig.,* 1 Battery, R. Art., Morar ...	...	...	November 1871, from Delhi ...	99	1464·6	20·20	60·60
7	1-11th Regiment, Morar ...	1864	1864	November 1869, from Fyzabad ...	888	1511·3	18·02	31·53
8	XXIV Brig.,* 4 Battery, R. Art., Gwalior Fortress ...	...	...	February 1872, from Darjeeling ...	94	989·4	...	85·11
9	106th Regiment, Jhansi, with Detachments of 265 men at Gwalior Fortress and 170 men at Nowgong ...	...	...	November 1870, from Umballa ...	897	2045·7	13·38	45·71
10	XXIII Brig., F. Battery, R. Art.,† Nowgong ...	...	...	January 1871, from Jullundur ...	155	1780·7	19·35	83·87
11	VIII Brig., E. Battery, R. Art., Saugor ...	1868	1868	December 1870, from Fyzabad ...	125	1432·0	8·00	64·00
12	2-25th Regiment, Jubbulpore, with Detachment of 313 men at Saugor‡ ...	1863	1863	December 1871, from Bareilly ...	910	1085·7	7·69	28·57
				REGIMENTS OF AGRA AND CENTRAL INDIA ...	4,643	1449·1	16·58	38·98

---

* XXIII Brigade for September.

† G. Battery, 19th Brigade, from September 1872.

‡ Head Quarters transferred from Saugor to Jubbulpore in March; before the removal of the Head Quarters the Strength was 463.

XXXI,—(continued).

and CENTRAL INDIA.

CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1872.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions	961	28	...	248	2	111	17	25	178	13	...	...	7	6	5	...	2	4	30	4	14	7	27	61	33	...	25	6	10	45	31	23
	Deaths ...	28	18	...	...	1	...	...	1	...	...	...	...	..	2	2	...	...	...	...	...	...	1	.	..	1	...	...	..	...	...	1	1
	Invaliding	16	...	...	...	...	...	...	1	...	2	...	...	2	4	...	...	...	...	...	1	...	...	1	...	2	...	...	...	...	...	...	3
2	Admissions	269	...	...	105	...	42	...	12	23	6	...	...	2	4	1	1	...	...	3	2	13	2	2	13	1	1	9	1	...	6	13	7
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
	Invaliding	10	...	...	...	...	...	...	...	...	...	...	...	3	...	...	2	..	...	.	1	...	...	...	...	...	1	...	...	...	...	2	1
3	Admissions	131	..	...	35	...	29	...	6	1	3	...	1	3	...	...	...	...	...	...	...	6	...	6	3	1	...	6	...	2	12	12	5
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	..	1	...	..	...	...	...	...	...	...	...
	Invaliding	6	...	...	...	...	1	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	..	1	...	...	...	...	...	...	...	...	1
4	Admissions	293	1	...	1	...	62	1	12	32	...	...	...	6	4	...	...	5	2	4	...	13	...	1	34	20	1	14	...	2	17	40	21
	Deaths ...	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	..	...	...	...	...	...
	Invaliding	11	...	...	...	...	...	...	2	...	...	...	...	...	3	...	...	...	...	...	...	...	...	1	...	3	..	...	...	...	.	...	2
5	Admissions	216	...	...	1	...	62	...	18	23	5	...	...	8	1	...	1	2	1	1	...	18	2	3	19	9	...	7	...	5	10	17	3
	Deaths ..	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	..	...	...	.	...	...
	Invaliding	8	...	...	...	...	...	...	1	...	...	...	...	3	1	...	1	...	...	...	...	1	...	...	..	1	...	...	...	...	...	...	...
6	Admissions	145	...	...	...	...	54	...	7	13	4	...	...	3	3	...	...	7	...	...	...	8	7	2	4	11	...	2	...	...	4	4	12
	Deaths ...	2	..	...	..	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	..	.
	Invaliding	6	...	...	...	...	.	...	1	...	...	...	...	...	1	...	...	1	...	...	...	..	...	..	...	...	...	...	..	...	...	1	2
7	Admissions	1,342	22*	...	1	...	557	95	33	101	20	...	...	22	9	...	2	4	7	17	7	68	6	17	79	41	6	49	...	6	68	58	47
	Deaths ...	16	7	...	...	...	...	...	...	...	...	...	...	...	.	2	...	...	...	...	2	...	...	...	...	2	...	...	...	..	...	1	2
	Invaliding	28	.	...	...	...	...	1	1	...	4	...	...	2	5	1	1	...	...	...	2	2	1	...	...	5	...	...	...	..	1	...	2
8	Admissions	93	...	...	...	...	4	3	5	12	5	1	..	1	2	...	1	4	...	...	...	9	1	2	3	1	...	13	...	1	9	10	6
	Deaths ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	.	...	...	...	..
	Invaliding	8	...	...	...	...	...	...	...	...	2	...	...	1	1	...	1	...	...	...	...	...	...	...	...	..	...	...	1	...	...	...	2
9	Admissions	1,835	1	...	2	1	1,083	8	120	85	8	2	1	13	12	5	4	18	3	16	3	74	6	8	41	21	16	86	2	20	72	55	60
	Deaths ...	12	...	...	...	...	1	1	...	...	...	...	...	...	1	2	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	3	1
	Invaliding	41	...	...	...	. .	...	...	10	...	4	...	...	8	4	...	1	...	...	1	2	3	..	..	...	6	. .	...	1	..	...	...	2
10	Admissions	276	2	...	...	...	106	1	21	23	4	...	1	3	7	...	...	5	1	3	1	15	2	2	5	10	1	13	1	4	10	25	10
	Deaths ...	3	2	...	...	. .	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding	13	...	...	...	...	1	...	1	...	1	...	...	3	2	...	...	1	...	...	1	...	...	...	..	1	...	...	...	..	...	...	2
11	Admissions	179	...	...	...	...	97	7	3	6	2	...	...	6	2	...	...	...	...	1	1	12	...	5	2	2	1	11	...	2	7	9	3
	Deaths ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	. .	...	. .	...	...	...	...	...	1	..
	Invaliding	8	...	...	...	...	...	..	...	...	1	...	...	2	2	...	...	...	...	...	...	1	...	...	...	1	.	...	..	1	...	...	...
12	Admissions	988	...	...	...	...	366	186	14	123	23	...	...	2	4	2	1	...	2	5	2	23	5	26	11	60	7	27	1	10	40	31	18
	Deaths ...	7	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	.	...	...	...	4	..	...	...	...	.	...	...
	Invaliding	26	...	...	...	...	3	...	1	...	2	...	...	1	5	1	...	...	...	1	2	...	...	1	...	6	...	...	...	...	...	1	2
	Admissions	6,728	54	...	393	3	2,573	318	276	620	93	3	3	76	54	13	10	47	20	80	20	273	38	101	275	208	33	261	11	62	300	305	205
	Deaths ...	77	28	...	...	1	2	1	1	...	..	...	...	...	5	6	...	..	..	...	5	.	3	3	..	12	...	..	...	..	.	6	4
	Invaliding	181	...	...	...	...	5	1	19	...	17	...	...	26	28	2	6	2	...	2	9	7	1	4	...	24	1	...	2	1	1	4	19

* These cases occurred among the convalescents at Kussowlie.

TABLE 5.—REGIMENTS of

	REGIMENTS & BATTERIES & STATIONS OF 1872.	YEAR OF ARRIVAL In India.	YEAR OF ARRIVAL In the Bengal Presidency.	Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Strength.	LOSS PER 1,000 By Deaths.	LOSS PER 1,000 By Invaliding.
1	F. Brig., C. Battery, R. H. Art., Umballa ...	...	...	March 1872, from Lucknow ...	149	1959·7	...	107·38
2	F. Brig., F. Battery, R. H. Art., Umballa ...	...	...	November 1871, from Meean Meer ...	154	1571·4	6·49	45·45
3	20th Hussars, Umballa (10½ months) ...	...	...	March 1870, from Campbellpore ...	375	888·0	29·33	13·31§
4	72nd Regiment, Umballa (Detachment to Dugshaie of 110 men from May to October) ...	1871	1871	April 1871, from England ...	901	1333·0	27·75	43·28
5	VIII Brig., G. Battery, R. Art., Jullundur ...	1868	1868	December 1870, from Cawnpore ...	140	1014·3	14·29	92·86
6	54th Regiment, Jullundur (Detachment to Umritsur of 125 men during January, February and March, and 217 men in December, and to Phillour of 64 men from April to September) ...	1871	1871	December 1871, from England ...	909	1006·6	40·70	13·20
7	XIII Brig., 8 Battery, R. Art., Ferozepore ...	1871	1871	December 1871, from England ...	83	2626·5	24·10	72·29
8	XIX Brig., B. Battery, R. Art., Ferozepore ...	...	...	January 1871, from Campbellpore ...	149	1443·0	40·27	26·85
9	39th Regiment, Ferozepore ...	1869	1869	November 1869, from England ...	936	982·9	7·48	13·89
10	XIX Brig., C. Battery, R. Art., Mooltan ...	...	...	January 1870, from Meerut ...	147	1571·4	13·61	68·03
11	41st Regiment, Mooltan (Detachment of 100 men at Dera Ismael Khan) ...	1865	1865	November 1870, from Subathoo ...	880	1547·7	21·59	77·27
12	A. Brig., E. Battery, R. H. Art., Sealkote ...	1865	1865	February 1870, from Peshawur ...	154	1253·2	6·49	58·44
13	5th Lancers, Sealkote ...	1864	1864	February 1870, from Lucknow ...	454	1145·4	28·63	48·46
14	58th Regiment, Sealkote (Detachment of 218 men at Umritsur from April to November) ...	1865	1865	February 1870, from Allahabad ...	851	1648·6	16·45	54·05
15	XIII Brig., 4 Battery, R. Art., Umritsur ...	1871	1871	November 1871, from England ...	82	1561·0	36·59	48·78
16	A. Brig., A. Battery, R. H. Art., Meean Meer ...	1866	1866	February 1872, from Peshawur ...	137	3306·5	116·79	131·39
17	XIII Brig., 7 Battery, R. Art., Meean Meer ...	1871	1871	November 1871, from England ...	86	3034·9	197·67	93·02
18	VIII Brig., H. Battery, R. Art., Meean Meer ...	1868	1868	January 1870, from Agra ...	131	1763·4	91·60	122·14
19	37th Regiment, Meean Meer (Detachment of 68 men at Fort Lahore) ...	1867	1867	December 1870, from Shahjehanpore and Moradabad ...	849	2228·5	98·94	35·34
20	A. Brig., B. Battery, R. H. Art., Rawulpindee ...	1866	1866	February 1870, from Peshawur ...	151	1543·0	26·49	46·36
21	XIII Brig., 1 Battery, R. Art., Rawulpindee* ...	1871	1871	December 1871, from England ...	98	1285·7	...	51·02
22	XVI Brig., D. Battery, R. Art., Rawulpindee ...	...	...	March 1872, from Allahabad ...	157	1273·9	12·74	31·85
23	36th Regiment, Rawulpindee† ...	1864	1864	November 1869, from Peshawur ...	913	772·2	18·63	28·48
24	70th Regiment, Rawulpindee‡ ...	1871	1871	December 1871, from England ...	879	1435·7	29·58	22·75

---

* Stationed in the Murree Hills from April to October.
† Furnished a working party of 287 men, which was employed in the Murree Hills from May to September.
‡ Furnished a working party of 200 men.
§ Invalids left behind on departure for England.

XXXI,—(continued).

the PUNJAB.

	Total Admissions and Loss of the Year by Deaths and Invaliding.	CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1872.																													
		Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy & Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy & Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 292	2	...	...	...	16	98	12	47	8	...	...	1	...	...	...	3	2	4	1	20	1	1	8	13	1	2	1	5	16	22	8
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 16	...	...	...	...	...	...	1	...	1	...	...	4	...	...	...	...	...	...	2	1	...	...	1	3	...	...	...	...	...	3	...
2	Admissions 242	...	...	2	...	12	70	6	53	2	...	...	...	...	1	...	1	...	1	...	6	1	...	16	11	1	6	...	2	17	20	14
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 7	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	3
3	Admissions 333	1	...	1	...	90	16	14	45	15	...	...	4	1	2	...	9	11	5	4	8	1	4	18	16	...	17	1	...	19	24	7
	Deaths ... 11	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	1	...	...	...	...	...	6*	...
	Invaliding... 5	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	1
4	Admissions 1,201	6	...	21	5	111	321	38	187	8	3	...	38	9	3	8	...	3	47	8	45	5	26	105	30	5	31	...	13	53	40	37
	Deaths ... 25	3	...	...	3	...	1	...	...	...	1	...	...	1	2	...	...	...	...	...	...	1	5	...	2	1	...	...	...	...	2	3
	Invaliding... 39	...	...	...	...	...	...	2	...	1	...	...	3	8	...	4	...	...	...	6	1	...	...	...	5	1	...	...	...	...	...	8
5	Admissions 142	...	...	...	...	5	17	17	20	...	...	...	3	...	...	2	...	...	5	...	13	4	2	2	13	2	6	...	...	10	13	8
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding... 13	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	1	...	...	...	...	1	3
6	Admissions 915	18	1	...	7	91	174	32	158	12	2	...	12	11	1	1	...	...	29	2	65	2	11	99	23	1	38	...	3	37	47	86‡
	Deaths ... 37	17	1	...	5	...	7	...	...	...	...	...	...	2	1	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...	1	...
	Invaliding... 12	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	1	1	...	...	1	3	...	...	...	...	...	...	2
7	Admissions 218	...	...	...	2	5	66	7	15	3	...	2	6	...	3	2	...	7	2	...	14	...	4	17	1	...	14	...	1	17	13	17
	Deaths ... 2	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 6	...	...	...	...	...	...	...	...	1	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
8	Admissions 215	...	...	...	...	13	19	8	20	5	...	1	3	1	2	...	1	3	4	1	8	...	4	19	4	1	19	...	...	29	35	15
	Deaths ... 6	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	2	...	2	...	...	...	...	...	...	...
	Invaliding... 4	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
9	Admissions 920	...	1	...	...	300	4	7	114	34	1	...	6	8	7	1	5	1	38	5	45	1	35	63	10	...	84	1	8	50	57	28
	Deaths ... 7	...	...	...	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	3	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding... 13	...	...	...	...	...	...	...	...	...	...	...	5	2	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...	3
10	Admissions 231	1	...	...	...	85	...	3	16	1	...	...	12	...	...	...	1	1	2	...	3	1	7	3	26	...	9	...	...	13	30	17
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	Invaliding... 10	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	4
11	Admissions 1,302	3	2	1	...	555	14	37	125	18	...	...	36	29	4	1	2	4	18	14	91	27	54	12	68	8	36	...	12	52	44	95
	Deaths ... 19	2	...	...	...	...	5	...	...	...	...	...	...	1	1	...	...	...	...	2	1	1	1	...	2	...	...	...	...	...	2	1
	Invaliding... 68	...	...	...	...	...	...	4	...	1	...	...	13	12	...	1	...	...	1	1	5	...	3	...	10	2	...	1	...	...	2	12
12	Admissions 193	...	...	...	...	58	11	5	14	1	...	...	6	...	...	1	...	...	2	1	4	1	11	16	9	...	4	...	3	9	34	3
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding... 9	...	...	...	...	...	...	1	...	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...	3	...	...	...	...	...	1	...
13	Admissions 520	1	...	...	2	25	122	31	36	4	...	...	17	...	1	...	5	1	8	2	19	2	16	10	31	2	36	...	14	43	61	31
	Deaths ... 13	1	...	...	2	...	3	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	3	...	...	...	...	...	1	...
	Invaliding... 22	...	...	...	...	...	...	1	...	1	...	...	13	...	...	...	...	...	...	1	...	...	...	...	2	...	...	1	...	...	1	2
14	Admissions 1,403	3	5	...	...	461	23	61	161	18	4	3	75	16	...	8	10	2	18	10	70	7	20	44	80	8	67	2	21	41	87	78
	Deaths ... 14	3	...	...	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	1	...	...	...	...	...	...	...	2	...
	Invaliding... 46	...	...	...	...	2	1	3	...	...	...	...	16	4	...	1	...	...	...	2	...	...	2	...	9	...	...	2	...	...	1	3
15	Admissions 128	...	...	...	1	67	3	...	10	3	2	...	3	2	...	...	...	...	1	1	2	...	...	4	7	...	4	...	...	7	7	4
	Deaths ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding... 4	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
16	Admissions 453	16	...	...	1	127	31	6	9	6	...	...	17	1	6	1	3	...	10	1	18	2	13	70	6	14	24	2	4	14	23	28
	Deaths ... 16	13	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	Invaliding... 18	...	...	...	...	...	...	...	...	...	...	...	5	1	...	1	...	...	...	...	1	...	...	...	2	6	...	...	...	...	...	2
17	Admissions 261	12	...	...	2	93	26	8	16	...	...	...	4	...	6	...	...	...	...	4	9	1	7	18	5	1	15	1	3	10	1	10
	Deaths ... 17	11	...	...	1	...	...	...	...	...	...	...	1	...	3	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 8	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	1	1	...	...	...	...	...	...	...	2
18	Admissions 231	14	...	...	...	54	10	5	13	3	...	...	3	1	...	...	...	...	3	4	17	...	9	25	8	1	14	...	2	13	17	15
	Deaths ... 12	10	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 16	...	...	...	...	1	...	...	...	1	...	...	2	...	...	...	...	...	...	2	...	...	1	...	3	...	...	...	...	...	3	3
19	Admissions 1,892	99	...	...	6	939	44	42	147	30	5	...	19	7	4	1	8	6	32	7	69	11	37	94	29	2	37	9	12	101	50	36
	Deaths ... 84	63	...	...	3	...	...	...	...	...	1	...	...	1	3	...	...	1	...	2	...	1	8	...	1	...	...	...	...	...	...	...
	Invaliding... 30	...	...	...	...	2	...	...	...	2	...	...	6	2	...	...	...	...	...	3	1	...	...	...	5	...	...	...	...	1	...	8
20	Admissions 233	1	2	...	...	77	5	7	38	1	...	...	10	...	...	...	3	2	...	...	7	1	...	12	9	3	4	1	1	17	23	9
	Deaths ... 4	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1
	Invaliding... 7	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...
21	Admissions 126	...	...	...	...	21	...	9	9	...	...	...	4	1	...	3	5	...	...	...	7	...	2	16	6	1	3	1	...	11	11	16
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 5	...	...	...	...	...	...	...	...	...	...	...	1	1	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
22	Admissions 200	...	...	...	1	47	8	3	22	5	...	...	8	1	1	...	2	1	1	...	10	1	1	9	5	...	25	3	2	12	23	9
	Deaths ... 2	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 5	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
23	Admissions 705	7	1	...	2	69	130	21	104	17	3	...	11	1	...	1	3	2	9	3	32	7	4	25	17	6	37	...	16	50	103	24
	Deaths ... 17	5†	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	1	...	...	...	...	...	3	1
	Invaliding... 26	...	...	...	...	...	...	1	...	6	...	...	10	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	1	1	4
24	Admissions 1,262	9	3	...	8	20	321	57	193	47	9	...	16	12	2	10	3	1	14	5	40	2	22	73	52	...	75	5	12	84	86	75
	Deaths ... 26	7†	1	...	4	...	1	...	...	...	...	...	...	1	3	...	...	...	...	1	...	1	3	...	...	...	...	1	...	...	3	...
	Invaliding... 20	...	...	...	...	...	...	1	...	...	...	...	1	3	...	3	...	...	...	2	1	...	1	...	4	...	...	...	...	1	1	2

* Of these cases five were suicidal deaths.

† Four of these deaths occurred at Murree.

‡ Five of these deaths occurred at Murree.

REGIMENTS of

	REGIMENTS & BATTERIES & STATIONS OF 1872.	DATE OF ARRIVAL		Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Strength.	LOSS PER 1,000	
		In India.	In the Bengal Presidency.				By Deaths.	By Invaliding.
25	A. Brigade, D. Battery, R. H. Art., Campbellpore ...	1865	1865	April 1871, from Peshawur ...	151	2026·5	13·25	72·85
26	XIII Brigade, 5 Battery, R. Art., Attock† ...	1871	1871	January 1872, from England ...	89	2775·3	33·71	67·42
27	2-60th Regiment, Nowshera, (Detachment of 102 men at Attock) ...	1867	1867	January 1872, from Peshawur ...	1064	2057·3	14·10	19·74
28	A. Brigade, C. Battery, R. H. Art., Peshawur† ...	1866	1866	January 1872, from Meerut ...	161	3093·2	18·63	74·53
29	XX Brigade, F. Battery R. Art.,* Peshawur† ...	...	...	December 1870, from Ferozepore ...	129	1899·2	31·01	62·02
30	XXIV Brigade,‡ 3 Battery, R. Art., Peshawur† ...	...	...	November 1871, from Lucknow ..	94	1808·5	31·92	10·64
31	1-6th Regiment, Peshawur† ...	1868	1868	April 1871, from Rawulpindee ...	883	1744·1	48·70	28·31
32	55th Regiment, Peshawur† ...	1864	1864	January 1872, from Chuckrata ...	880	2754·5	40·91	35·23
				REGIMENTS OF THE PUNJAB ...	13,171	1617·0	32·05	39·78

6.—*REGIMENTS cantoned during*

1	V Brigade, 3 Battery, R. Art., Darjeeling ...	1867	1871	December 1871, from Toungoo ...	84	940·5	...	11·90
2	2-1st Regiment, Wing, Raneekhet ...	1866	1870	January 1870, from Nusseerabad ...	474	1204·7	37·97	...§
3	92nd Regiment, Chuckrata ...	1868	1868	March 1872, from Jullundur ...	895	521·8	10·05	13·41
4	85th Regiment, Dugshaie ...	1868	1868	October 1870, from Meean Meer ...	935	818·2	27·81	27·81
5	2-12th Regiment, Subathoo ...	1864	1864	February 1871, from Jubbulpore ...	913	852·1	8·76	14·24
6	XIII Brigade, 6 Battery, R. Art., Jutogh ...	1871	1871	March 1872, from England ...	99	636·4	20·20	...
				HILL STATIONS OF THE BENGAL PRESIDENCY ...	3,400	800·9	18·53	17·77

7.—*INVALID GARRISON, ROAD-MAKING*

1	Invalid Garrison, Chunar	23	1043·5	...	...
2	Road-making Parties, Murree Hills, May to September	668	444·6	4·49	...
3	Detachment 44th Regiment, Puchmurree, March to December	151	1808·0	13·24	...
4	Detachments at Cherat, from Peshawur, May to November	760	565·8	15·79	...

---

* A. Battery, 8th Brigade, from September 1872.
† The Troops at Nowshera and Peshawur sent detachments, averaging 760, to Cherat, from May to November. See Section 7.
‡ XXIII Brigade from September.
§ See Head Quarters, Ratio, Section 3.

the PUNJAB,- (continued).

Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1872.

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
25	Admissions 306	...	...	...	...	46	25	18	6	...	1	...	16	...	...	...	2	...	9	...	39	1	5	23	18	3	14	2	3	19	46	10
	Deaths ... 2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding... 11	...	...	...	...	1	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	2
26	Admissions 247	2	...	...	1	111	25	8	13	2	...	1	7	...	1	1	4	...	1	...	9	...	2	16	8	3	6	1	...	10	5	10
	Deaths ... 3	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 6	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1
27	Admissions 2,189	3	...	...	5	1,117	206	36	195	20	3	...	48	1	1	...	9	2	19	2	71	5	35	52	80	6	27	4	15	81	75	65
	Deaths ... 15	2*	...	...	5	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	2	2
	Invaliding... 21	...	...	...	...	...	...	2	...	1	...	...	5	2	...	...	...	...	...	...	2	...	1	...	5	...	...	1	...	...	...	2
28	Admissions 498	...	...	...	2	228	56	15	31	1	...	...	5	...	...	...	...	1	3	...	36	5	9	19	17	5	12	1	7	16	22	7
	Deaths ... 3	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 12	...	...	...	...	6	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	4	...	...	...	...	...	1	...
29	Admissions 245	4	...	...	1	90	23	2	20	2	...	...	5	1	1	1	...	1	3	1	13	2	6	7	10	3	8	5	1	8	16	11
	Deaths ... 4	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 8	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	1	...	...	1	...	...	...	...	2	...	...	...	1
30	Admissions 170	...	1	...	1	76	11	3	14	3	...	...	3	1	...	...	1	3	3	1	9	2	5	4	...	...	3	...	1	12	9	4
	Deaths ... 3	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding... 1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	Admissions 1,540	89	...	...	4	671	258	12	216	16	...	...	10	6	1	2	3	1	14	4	68	10	14	68	27	6	30	1	11	63	56	21
	Deaths ... 43	31	...	...	2	...	1	...	...	...	...	...	...	4	...	2	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...
	Invaliding... 25	...	...	...	...	...	...	...	...	2	...	...	...	4	...	1	...	...	...	6	2	...	...	1	6	...	...	...	...	...	...	9
32	Admissions 2,424	27	...	...	...	833	748	22	71	31	...	1	20	7	3	8	17	12	19	14	76	14	35	112	52	4	74	2	8	59	95	51
	Deaths ... 36	21	...	...	...	1	1	...	...	...	1	...	...	1	2	...	...	...	...	2	...	1	2	...	1	...	...	...	...	...	3	...
	Invaliding... 81	...	...	...	...	...	...	1	...	2	...	...	4	3	...	1	1	...	...	5	1	...	2	1	3	1	...	1	...	...	...	5
	Admissions 21,297	268	16	25	51	6,410	2,885	552	2,137	325	33	8	437	117	50	47	100	67	324	95	949	117	401	1070	703	87	790	43	180	1002	1195	801
	Deaths ... 430	195	4	...	34	1	27	...	...	...	3	...	1	15	26	2	...	1	...	18	3	13	25	1	22	1	...	1	..	...	27	10
	Invaliding... 524	...	...	...	...	15	2	18	...	24	..	...	113	51	1	18	1	...	1	37	17	..	13	9	82	12	...	9	1	5	18	77

the year at HILL STATIONS.

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 79	...	...	...	...	16	...	8	13	...	...	...	...	1	...	3	2	...	...	...	2	...	2	2	4	...	5	...	2	3	12	4
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Admissions 571	...	...	...	4	53	13	16	138	5	...	...	17	4	1	3	10	...	7	4	60	5	19	76	14	...	22	...	5	24	38	33
	Deaths ... 18	...	...	...	4	...	1	...	...	...	...	...	...	...	...	3	...	...	...	...	1	1	7	1	...	...	...	...	...	...	...	...
	Invaliding... ‡	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Admissions 407	3	...	...	1	69	10	28	120	7	...	...	3	...	...	...	2	...	3	...	40	5	6	24	30	...	26	..	6	23	37	15
	Deaths ... 9	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	1	1	2
	Invaliding... 12	...	...	...	...	...	...	3	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	1	2	...	...	...	...	...	1	2
4	Admissions 765	20	...	78†	1	54	7	52	122	7	8	...	9	1	...	4	2	4	20	8	51	6	14	51	10	5	43	1	10	45	75	48
	Deaths ... 26	18	...	...	1	1	...	...	...	...	...	...	1	...	...	2	...	...	...	1	...	...	...	...	1	...	...	...	...	...	..	1
	Invaliding... 26	...	...	...	...	...	...	1	...	...	...	...	2	1	...	...	...	...	1	5	2	1	...	1	...	...	...	2	...	1	1	8
5	Admissions 778	4	...	...	2	41	47	57	80	11	8	...	26	8	...	2	12	3	10	7	62	...	27	106	26	...	40	3	9	63	91	33
	Deaths ... 8	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	1	1
	Invaliding... 13	...	...	...	...	...	...	1	...	...	...	...	2	4	...	...	...	...	...	1	...	...	...	...	2	...	...	1	...	...	1	1
6	Admissions 63	1	...	...	...	4	1	5	10	1	...	...	...	...	...	...	...	...	...	...	2	1	...	7	2	...	4	1	1	6	7	1
	Deaths ... 2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admissions 2,723	37	...	78	8	237	78	160	492	31	16	...	55	14	1	12	28	7	40	19	217	17	68	266	95	5	140	6	33	164	260	134
	Deaths ... 63	20	...	...	6	1	3	...	...	...	...	...	1	...	...	5	...	...	..	2	1	1	9	2	4	..	...	...	...	1	3	4
	Invaliding... 52	...	...	...	...	...	...	5	...	...	..	...	6	6	...	1	...	...	1	6	2	1		2	4	..	...	3	...	1	3	11

PARTIES, and PUCHMURREE and CHERAT SANITARIA.

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 24	...	...	...	...	6	...	2	...	..	...	...	...	...	...	...	...	1	2	...	...	1	2	3	1	..	..	2	1	...	...	3
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
2	Admissions 297	...	...	...	...	20	34	21	60	...	...	3	...	3	...	...	...	1	1	...	19	...	9	27	11	3	...	...	...	18	36	31
	Deaths ... 3	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
3	Admissions 273	...	...	...	...	176	3	2	45	...	...	...	...	1	...	...	...	...	1	...	7	...	8	3	7	...	...	...	...	8	5	7
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
4	Admissions 430	1	...	...	6	42	91	16	28	...	...	...	...	...	1	...	...	3	7	...	29	...	35	22	39	8	...	...	...	25	17	60
	Deaths ... 12	...	...	...	6	...	.	...	...	..	...	...	...	...	...	1	...	...	...	..	..	.	1	...	3	...	.	...	.	...	...	1

---

* These cases occurred at Attock and Murree.
† These cases occurred at Meerut, after the relief of the Regiment.
‡ With Head Quarters, Section 3.

8.—CONVALESCENT

	CONVALESCENT DEPOTS.	Period of Occupation.	Average Strength during the period of occupation.	Admission-rate of Season 1872 per 1,000 of Strength.	Loss per 1,000 By Deaths.	Loss per 1,000 By Invaliding.
1	Darjeeling	Nine months, April to December ...	105	1276·2	19·05	47·62
2	Nynee Tal	Nine months, January, and from May to December ...	241	1361·4	12·45	132·78
3	Landour	Seven months, April to October ...	205	912·2	19·51	112·19
4	Kussowlie	Seven months, April to October* ...	656	1298·8	47·26	129·57
5	Dalhousie	Seven months, April to October ...	502	858·6	7·97	67·73
6	Murree	Seven months, May to November ...	526	872·6	47·53	...†
		CONVALESCENT DEPÔTS OF THE BENGAL PRESIDENCY ...	2,320	1029·7	29·74	104·74
		EUROPEAN ARMY OF THE BENGAL PRESIDENCY ...	36,591	1489·8	27·25	43·73‡

---

* Kussowlie Depôt was still occupied during November by a Strength averaging 469, and during December by an average of 374 Invalids.

† The Invaliding of the men who spent the season at Murree took place after their return to their Regiments.

‡ See Note to Table XXIX.

ANNUAL RELIEF OF THE

ARTILLERY.

A. Brigade	D. Battery	From Campbellpore	To Sealkote ...	... Arrived	February	1873.
	E. Battery	„ Sealkote	„ Morar... ...	... Arrived	January	1873.
C. Brigade	A. Battery	„ England	„ Meerut ...	... Arrived	March	1873.
D. Brigade	D. Battery	„ Meerut	„ England ...	... Marched	October	1872.
F. Brigade	B. Battery	„ Morar	„ Campbellpore ...	... Arrived	February	1873.
8th Brigade	B. Battery	„ Dinapore	„ Meerut ...	... Arrived	March	1873.
16th Brigade	C. Battery	„ Morar	„ Meerut ...	... Arrived	February	1873.
	F. Battery	„ Meerut	„ Morar ...	... Arrived	February	1873.
19th Brigade	D. Battery	„ Meerut	„ Dinapore ...	... Arrived	January	1873.

CAVALRY.

4th Hussars	From Meerut	To Rawulpindee ...	... Arrived	February	1873.
10th Hussars	„ England	„ Muttra ...	... Arrived	March	1873.
11th Hussars	„ Muttra	„ Umballa ...	... Arrived	November	1872.
15th Hussars	„ Mhow	„ Meerut ...	... Arrived	January	1873.
20th Hussars	„ Umballa	„ England ...	... Marched	October	1872.

ANNUAL RELIEF OF THE

ARTILLERY.

C. Brigade	Head Quarters	From England	To Bangalore ...	... Arrived	March	1873.
	B. Battery	„ England	„ Secunderabad ...	... Arrived	March	1873.
	C. Battery	„ England	„ Bangalore ...	... Arrived	March	1873.
D. Brigade	A. Battery	„ Secunderabad	„ England ...	... Marched	November	1872.
	B. Battery	„ Bangalore	„ England ...	... Marched	November	1872.
9th Brigade	A. Battery	„ St. Thomas' Mount	„ Secunderabad ...	... Arrived	February	1873.
	C. Battery	„ Kamptee	„ Bangalore ...	... Arrived	February	1873.
20th Brigade	C. Battery	„ Secunderabad	„ St. Thomas Mount	... Arrived	February	1873.
	G. Battery	„ Bangalore	„ Kamptee ...	... Arrived	February	1873.

ANNUAL RELIEF OF THE

ARTILLERY.

C. Brigade	D. Battery	From England	To Ahmednuggur ...	... Arrived	March	1873.
	E. Battery	„ England	„ Mhow ...	... Arrived	March	1873.
D. Brigade	C. Battery	„ Ahmednuggur	„ England ...	... Marched	November	1872.
	E. Battery	„ Mhow	„ England ...	... Marched	November	1872.
6th Brigade	1. Battery	„ Mhow	„ Aden ...	... Arrived	January	1873.
	2. Battery	„ Bombay	„ Mhow ...	... Arrived	December	1872.
	4. Battery	„ Aden	„ Bombay ...	... Arrived	February	1873.
	5. Battery	„ Aden	„ Bombay ...	... Arrived	February	1873.
	6. Battery	„ Bombay	„ Aden ...	... Arrived	January	1873.

XXXI,—(concluded).

DEPOTS.

	Total Admissions and Loss of the Year by Deaths and Invaliding.		Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1872.																															
			Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions	158	...	...	...	...	43	4	8	11	4	...	...	...	...	...	...	...	...	6	...	7	2	4	15	12	5	12	...	1	12	8	4
	Deaths ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	Invaliding	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	3
2	Admissions	351	...	...	...	...	69	1	40	20	10	...	...	28	1	...	2	2	1	...	1	25	1	8	17	30	2	19	...	6	23	19	26
	Deaths ...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...
	Invaliding	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Admissions	196	...	...	...	...	53	...	19	20	8	1	...	10	2	1	1	...	..	...	2	12	5	4	1	18	2	7	2	4	17	4	3
	Deaths ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...
	Invaliding	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
4	Admissions	963	27	...	...	...	209	18	21	91	24	...	..	44	8	1	1	4	6	9	6	43	17	13	101	91	6	65	1	10	35	23	20
	Deaths ...	31	13	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3	2	...	8	...	...	...	...	...	1	1
	Invaliding	85	...	..	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Admissions	459	...	...	...	...	59	4	8	125	11	...	...	13	6	...	1	2	1	14	1	32	3	11	26	36	...	21	4	8	25	26	22
	Deaths ...	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	...
	Invaliding	34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Admissions	519	33	...	...	...	79	10	21	73	34	1	..	35	9	...	...	...	...	6	1	28	6	5	54	18	...	30	3	2	28	20	23
	Deaths ...	25	23	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admissions	2,646	60	...	...	...	512	37	117	340	91	2	...	130	26	2	5	8	8	35	11	147	34	45	274	205	15	154	10	31	140	100	107
	Deaths ...	69	36	...	...	...	...	2	...	...	...	...	...	...	2	1	1	...	...	...	1	...	4	4	...	12	...	...	1	...	...	3	2
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admissions ...	54,513	589	25	3949	102	13142	4871	1869	5865	836	77	17	1007	334	147	138	319	147*	879	229	2336	357	1263	2772	2032	239	2,201	111	509	2890	3068	2194
	Deaths	997	380	7	..	58	4	61	1	...	1	4	1	3	34	57	15	..	4	...	42	9	39	63	9	86	1	...	5	...	4	62	37
	Invaliding	1,578	...	..	...	...	31	11	96	...	67	...	...	338	161	7	41	11	...	11	93	51	7	58	26	236	24	...	29	6	21	33	220

* The number of cases of Drunkenness reported in the Bengal Army in 1872 was 11,779.

ARMY OF BENGAL, 1872-73.

INFANTRY.

1-6th Regiment	From Peshawur	To Sealkote ...	... Arrived	March 1873.
1-11th Regiment	„ Morar	„ Subathoo ...	... Arrived	February 1873.
2-12th Regiment	„ Subathoo	„ Ferozepore ...	... Arrived	December 1872.
26th Regiment	„ Fyzabad	„ Morar ...	... Arrived	December 1872.
36th Regiment	„ Rawulpindee	„ Meean Meer ...	.. Arrived	March 1873.
37th Regiment	„ Meean Meer	„ Dugshale ...	... Arrived	March 1873.
39th Regiment	„ Ferozepore	„ Peshawur ...	... Arrived	February 1873.
40th Regiment	„ England	„ Lucknow ...	... Arrived	November 1872.
51st Regiment	„ England	„ Fyzabad ...	... Arrived	November 1872.
58th Regiment	„ Sealkote	„ Nowshera ...	... Arrived	February 1873.
2-60th Regiment	„ Nowshera	„ Murree Hills ...	... Arrived	April 1873.
62nd Regiment	„ Lucknow	„ Dum-Dum and Barrackpore	Arrived	November 1872.
65th Regiment	„ Dugshaie	„ Meerut ...	... Arrived	November 1872.
105th Regiment	„ Meerut	„ Aden ...	... Arrived	December 1872.
107th Regiment	„ Dum-Dum and Barrackpore.	„ Secunderabad ...	... Arrived	December 1872.

ARMY OF MADRAS, 1872-73.

INFANTRY.

2-10th Regiment	From Rangoon	To England ...	... Marched	December 1872.
1-21st Regiment	„ Bangalore	„ Madras ...	... Arrived	December 1872.
2-21st Regiment	„ Madras	„ England ...	... Marched	December 1872.
2-24th Regiment	„ Secunderabad	„ England ...	... Marched	December 1872.
43rd Regiment	„ England	„ Cannanore ...	... Arrived	November 1872.
67th Regiment	„ England	„ Rangoon ...	... Arrived	December 1872.
69th Regiment	„ Cannanore	„ Bangalore ...	... Arrived	November 1872.
107th Regiment	„ Dum-Dum	„ Secunderabad ...	... Arrived	December 1872.

ARMY OF BOMBAY, 1872-73.

ARTILLERY,—*continued.*

9th Brigade	D. Battery	From Nusseerabad	To Kirkee ...	... Arrived	January 1873.
18th Brigade	E. Battery	„ Kirkee	„ Nusseerabad ...	... Arrived	February 1873.

CAVALRY.

3rd Hussars (Head Quarters)	From Ahmednuggur	To Mhow, leaving Detachment of 150 men at Ahmednuggur	... Arrived	January 1873.

INFANTRY.

3-60th Regiment	From Aden	To England ...	... Embarked	December 1872.
105th Regiment	„ Meerut	„ Aden ...	... Arrived	December 1872.

EUROPEAN

XX

ABSTRACT of the RETURNS showing the ADMISSIONS, DEATHS and

SEE NOTE PER

1.—*REGIMENTS of RAJPOOTANA,*

	REGIMENTS & BATTERIES & STATION OF 1872.	Date of Arrival in India.	Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Average Strength.	LOSS PER 1,000	
						By Deaths.	By Invaliding.
1	59th Regiment, Nusseerabad, with Detachment of 323 men at Neemuch ...	March 1869 ...	January 1872, from Mhow ...	887	1841·0	39·46	48·55
2	IX Brig., D. Battery, R. Art., Nusseerabad ...	November 1869 ...	January 1870, from England ...	136	2117·6	44·12	66·18
3	XVIII Brig., D. Battery, R. Art., Neemuch ...	...	January 1871, from Kirkee ...	151	1500·0	26·49	59·60
4	49th Regiment, Mhow, with Detachment of 100 men at Indore ...	December 1865 ...	December 1871, from Poona ...	891	1316·4	10·84	65·00
5	15th Hussars, Mhow ...	December 1869 ...	December 1869, from England ...	480	1500·0	18·75	27·08
6	D. Brig., E. Battery, R. H. Art., Mhow (11 months) ...	...	December 1870, from Kirkee ...	168	1797·6	...	...†
7	VI Brig., 1 Battery, R. Art., Mhow ...	February 1869 ...	December 1869, from Deolalee ...	82	1390·2	...	97·56
8	108th Regiment, Deesa, with Detachment at Mount Aboo* ...	...	January 1871, from Belgaum ...	910	2442·9	26·37	26·37
9	IX Brig., E Battery, R. Art., Deesa ...	November 1869 ...	March 1871, from Kirkee ...	144	2861·2	27·78	76·39
10	XVIII Brig., C. Battery, R. Art., Ahmedabad ...	...	March 1872, from Belgaum ...	143	2700·0	27·97	90·91
11	66th Regiment, Kurrachee, with Detachment of 270 men at Hyderabad ...	April 1870 ...	April 1870, from England ..	924	1645·0	20·56	20·56
12	IX Brig., B. Battery, R. Art., Kurrachee ...	December 1869 ...	March 1872, from Kirkee ...	148	1702·7	20·27	33·78
13	XVIII Brig., B. Battery, R. Art., Hyderabad ...	...	March 1872, from Kurrachee ...	145	2020·7	13·79	62·07
14	3-60th Regiment, Aden (11 months) ...	December 1857 ...	November 1871, from Bellary ...	563	1239·8	20·64	23·09
15	VI Brig., 4 Battery, R. Art., Aden ...	February 1869 ...	February 1871, from Bombay ...	76	1276·3	13·16	65·79
16	VI Brig., 5 Battery, R. Art., Aden ...	February 1869 ...	February 1871, from Bombay ...	79	1367·1	12·66	37·97
			REGIMENTS OF RAJPOOTANA, MALWA, SCINDE AND ADEN ...	5,867	1780·3	24·20	46·70

2.—*REGIMENTS of the*

1	VI Brig., 2 Battery, R. Art., Bombay ...	February 1869 ...	February 1871, from Aden ...	78	1948·7	51·28	25·64
2	VI Brig., 3 Battery, R. Art., Bombay ...	February 1869 ...	February 1871, from Aden ...	77	1584·4	25·97	103·90
3	VI Brig., 6 Battery, R. Art., Bombay ...	February 1869 ...	November 1870, from Poona ...	81	2321·0	24·70	24·69

---

* Averaging 240 during the months March, April and May, and 80 during the remaining nine months of the year.

† This Brigade took home its Invalids.

TROOPS, 1872.

XII.

INVALIDING of each REGIMENT of the ARMIES of MADRAS and BOMBAY for the YEAR.

FIXED TO TABLE XXX.

MALWA, SCINDE and ADEN.

CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1872.

	Total Admissions and Loss of the Year by Death and Invaliding.	Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 1,633	27	...	62	9	855	40	17	242	21	1	..	2	4	8	3	3	...	16	...	31	6	37	60	39	7	30	2	11	44	28	83
	Deaths ... 35	22	...	...	7	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	1	1	...	..	...	...	...	...	...	...	1
	Invaliding... 75	...	...	...	...	9	...	...	...	1	...	...	36	4	...	...	...	...	...	...	2	1	4	...	5	...	...	2	...	...	1	10
2	Admissions 288	...	...	...	1	115	...	10	26	1	...	...	4	1	2	...	1	...	8	...	5	1	...	9	10	...	13	3	5	47	23	8
	Deaths ... 6	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	1
	Invaliding... 9	...	...	...	...	2	...	1	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1
3	Admissions 228	2	...	...	1	76	4	4	50	3	...	...	2	1	1	...	1	2	3	2	3	...	2	5	1	1	5	...	3	25	22	9
	Deaths ... 4	...	..	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding... 9	...	...	...	...	3	...	...	...	1	...	...	8	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
4	Admissions 1,172	5	...	3	1	530	56	15	143	24	1	...	21	14	3	1	1	12	11	1	25	5	12	35	18	6	17	1	7	104	79	21
	Deaths ... 15	5	..	...	...	...	1	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	1	...	2	...	...	...	...	...	1	1
	Invaliding... 58	...	...	...	...	...	...	4	...	...	...	...	32	4	1	1	...	...	...	...	2	...	1	...	1	...	...	...	...	...	3	6
5	Admissions 720	2	..	...	...	393	7	15	80	1	2	...	9	...	8	...	9	...	10	...	22	1	...	15	15	...	13	...	2	56	38	27
	Deaths ... 9	1	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	1
	Invaliding... 13	...	...	..	...	...	...	...	...	...	...	...	4	...	...	1	...	...	...	...	2	...	...	...	4	...	...	...	...	...	1	1
6	Admissions 302	...	...	...	...	163	...	8	27	2	...	...	16	...	...	...	...	1	...	...	4	1	...	13	4	1	8	...	5	19	27	3
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	-	..	...	...	...	...	...	...
7	Admissions 114	...	...	...	...	71	...	6	9	...	...	...	7	...	...	...	...	...	1	...	2	...	...	5	...	...	4	...	1	1	6	1
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding... 8	...	...	...	...	2	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	1
8	Admissions 2,223	...	...	497	1	1112	126	15	74	18	1	...	13	21	8	1	2	1	17	4	43	3	16	41	30	...	58	1	6	42	38	34
	Deaths ... 24	...	...	...	...	2	1	...	...	1	...	...	...	6	5	...	...	1	...	3	...	...	...	...	1	...	...	1	...	...	1	2
	Invaliding... 24	...	...	...	...	...	...	2	...	2	...	...	3	8	...	...	...	...	...	...	1	...	2	...	4	...	...	...	...	1	...	1
9	Admissions 411	...	...	100	...	154	31	...	15	...	...	...	4	...	2	...	2	1	5	...	5	...	6	14	27	1	8	...	...	8	12	16
	Deaths ... 4	...	...	...	..	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding... 11	...	..	...	...	...	...	...	...	...	...	...	...	1	.	1	...	...	...	...	...	...	...	...	5	1	...	...	...	...	...	3
10	Admissions 386	...	1	22	..	149	4	10	25	1	...	...	16	...	6	...	...	2	8	...	3	2	1	14	5	...	27	...	3	20	49	9
	Deaths ... 4	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding... 13	...	...	...	...	...	...	2	...	...	...	...	6	...	...	1	...	...	1	...	1	...	...	...	2	...	...	...	...	...	...	...
11	Admissions 1,520	...	...	145	10	554	94	15	79	6	...	1	23	6	8	1	4	8	15	1	38	3	49	125	18	2	50	2	3	108	74	85
	Deaths ... 19	...	...	...	6	...	2	...	...	...	...	...	..	1	2	1	...	...	...	...	...	1	2	...	...	...	...	...	...	...	2	2
	Invaliding... 19	...	...	...	...	2	...	1	...	...	...	...	2	8	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	...	1	6
12	Admissions 252	...	...	49	1	47	4	18	10	2	...	...	5	...	2	...	2	1	5	...	6	...	18	8	11	1	5	1	...	26	17	13
	Deaths ... 3	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	. .	...
	Invaliding... 5	...	...	...	..	...	...	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
13	Admissions 293	...	...	3	...	142	3	5	15	3	...	..	7	1	2	5	1	4	3	...	3	...	4	10	5	...	13	...	5	12	35	12
	Deaths ... 2	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
	Invaliding... 9	...	...	...	...	...	...	1	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	1	..	...	...	...	...	2	2
14	Admissions 698	...	...	330	...	26	67	19	21	1	...	1	20	1	10	1	...	3	8	3	13	1	20	38	18	...	28	3	3	38	18	9
	Deaths ... 15	...	...	...	1	...	..	...	...	...	...	...	...	...	4	...	...	...	...	1	...	...	2	...	3	...	...	...	...	...	4	...
	Invaliding... 13	...	...	...	...	...	...	2	...	2	...	...	2	...	...	1	...	...	1	...	...	...	2	...	1	...	...	1	...	1	...	...
15	Admissions 97	...	...	14	...	2	10	4	10	...	...	...	4	...	1	...	...	...	...	...	...	2	7	13	9	...	...	1	...	7	9	4
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
	Invaliding... 5	...	...	...	...	...	...	...	...	...	..	...	2	...	...	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...
16	Admissions 108	...	...	30	..	2	13	4	6	1	...	...	9	...	...	...	...	...	...	...	2	...	5	16	3	...	9	...	2	2	2	2
	Deaths ... 1	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	1	...
	Invaliding... 3	..	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Admissions 10,445	36	1	1255	24	4391	459	174	832	84	5	2	162	49	40	12	26	35	105	11	205	25	177	419	213	19	288	14	56	557	477	286
	Deaths ... 142	28	...	...	17	2	4	...	...	1	...	...	...	12	24	1	...	1	...	6	...	5	6	...	12	...	...	1	...	...	14	8
	Invaliding... 274	...	...	...	...	18	...	15	...	9	...	...	98	23	3	7	...	...	2	1	8	1	10	1	25	1	..	7	...	3	9	33
DECCAN and NAGPORE.																																
1	Admissions 152	...	...	53	1	28	22	7	6	...	...	...	1	1	...	...	...	1	...	...	7	...	7	2	6	...	...	...	...	5	3	2
	Deaths ... 4	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	Invaliding... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	..	...	...	...	...	...	...
2	Admissions 122	...	...	34	...	11	12	5	15	...	...	...	2	...	...	...	1	...	2	...	10	...	1	4	6	...	5	...	...	3	9	2
	Deaths ... 8	...	...	...	...	...	1	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	..	1	...	...	...	...	...	...	...
	Invaliding... 2	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	4	...	...	...	...	...	...	1
3	Admissions 188	...	1	53	...	31	12	6	7	...	...	...	5	2	...	...	1	1	3	...	11	1	9	6	14	...	3	...	...	8	7	7
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	..	...
	Invaliding... 2	...	...	...	..	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...

REGIMENTS of the DECCAN

	REGIMENTS & BATTERIES & STATION OF 1872.	Date of Arrival in India.	Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Average Strength.	Loss per 1,000.*	
						By Deaths.	By Invaliding.
4	D. Brig., C. Battery, R. H. Art., Ahmednuggur (10 months)	...	January 1870, from Kirkee	167	856·3	11·98	...‖
5	3rd Hussars, Ahmednuggur	December 1868	December 1868, from England	475	913·7	18·95	40·00
6	Sappers and Miners, Kirkee	...	......	14	...	...	...
7	XVIII Brig., F. Battery, R. Art., Kirkee	...	March 1871, from Neemuch	155	1451·6	...	38·71
8	XVIII Brig., E. Battery, R. Art., Kirkee	...	February 1870, from Sholapore	139	904·0	...	50·36
9	IX Brig., F. Battery, R. Art., Kirkee	November 1869	March 1872, from Ahmedabad	146	1842·5	...	41·10
10	83rd Regiment, Poona*	April 1870	April 1870, from Gibraltar	884	1255·7	12·44	49·77
11	68th Regiment, Poona	March 1872	March 1872, from England	873	1538·4	13·75	21·76
12	56th Regiment, Poona	April 1871	April 1871, from England	922	1527·1	13·02	22·78
13	XVIII Brig., A. Battery, R. Art., Belgaum	...	March 1872, from Ahmedabad	148	824·3	6·76	33·78
14	1-2nd Regiment, Belgaum	October 1866	, from Poona	929	719·2	6·46	24·76
15	XX Brig., D. Battery, R. Art., Kamptee	...	October 1870, from Cannanore	145	2331·0	20·69	55·17
16	IX Brig., C. Battery, R. Art., Kamptee	November 1869	November 1869, from England	164	1908·5	18·29	30·59
17	44th Regiment, Kamptee, with Detachment of 151 men at Puchmurree†	November 1871	November 1871, from England	900	2025·6	21·11	17·78
18	XX Brig., C. Battery, R. Art., Secunderabad	...	March 1868, from Thayetmyo	151	1675·5	39·74	72·85
19	V Brig., 5 Battery, R. Art., Secunderabad	November 1867	February 1872, from Rangoon	94	1308·5	31·91	74·47
20	IX Brig., G. Battery, R. Art., Secunderabad	November 1869	December 1869, from England	146	1431·5	20·55	116·44
21	D. Brig., A. Battery, R. H. Art., Secunderabad (11 months)	...	January 1872, from Kamptee	146	1643·8	27·40	20·55
22	16th Lancers, Secunderabad	September 1865	January 1872, from Bangalore	468	1523·6	38·63	79·40
23	76th Regiment, Secunderabad	January 1864	March 1871, from Thayetmyo and Toungoo	912	1453·9	24·12	53·73
24	2-24th Regiment, Secunderabad (11 months)	November 1865	February 1869, from Rangoon	864	951·4	23·15	15·05‖
			REGIMENTS OF THE DECCAN AND NAGPORE	8,744	1427·1	18·53	37·68

3.—REGIMENTS of

1	VI Brig., 7 Battery, R. Art., St. Thomas' Mount	...	February 1872, from Secunderabad	85	1764·7	23·53	47·06
2	XX Brig., A Battery, R. Art.,‡ St. Thomas' Mount	November 1869	November 1869, from England	157	1407·6	6·37	70·06
3	XXIII Brig., A. Battery, R. Art.,§ St. Thomas' Mount	...	February 1871, from Thayetmyo	133	1323·3	30·08	45·11

---

* Detachments of 210 men at Sattara, 130 men at Asseerghur, and 257 men at Bombay.

† See Table XXXI, Section 7.

‡ A. Battery, 9th Brigade, from September 1872.

§ A. Battery, 20th Brigade, from September 1872.

‖ Invalids sent home with the Regiment.

and NAGPORE,—(continued).

CAUSES OF ADMISSIONS INTO HOSPITAL, OF DEATHS IN AND OUT OF HOSPITAL, AND OF THE INVALIDING OF 1872.

	Total Admissions and Loss of the Year by Death and Invaliding.	Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anaemia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
4	Admissions 143	...	...	...	1	61	7	4	19	...	...	...	...	1	1	1	...	...	2	...	13	...	...	6	1	1	4	...	...	11	9	1
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Admissions 434	1	2	2	4	109	27	8	59	17	1	...	...	2	2	1	7	2	10	3	16	4	3	6	18	1	23	1	2	37	40	17
	Deaths ... 9	1	...	...	1	...	...	...	...	1	1	...	...	...	2	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...
	Invaliding ... 19	...	...	...	...	1	...	...	...	5	...	...	4	1	...	1	...	...	...	2	...	...	1	...	1	...	...	...	...	1	...	2
6	Admissions 4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Admissions 225	...	...	26	...	75	6	13	14	5	...	...	1	6	...	...	...	...	1	...	7	3	2	5	8	1	11	...	2	11	26	7
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 6	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	...
8	Admissions 134	...	...	18	...	36	1	8	10	2	...	...	1	2	...	...	1	...	2	...	1	...	...	2	1	1	9	2	3	11	19	4
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 7	...	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	1
9	Admissions 269	...	...	15	...	53	25	8	20	2	...	...	7	2	3	...	2	3	7	2	6	4	4	15	5	9	10	...	2	18	21	28
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 6	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...
10	Admissions 1,110	...	1	110	6	276	142	27	126	18	...	...	11	13	2	4	1	1	10	5	46	12	27	54	26	1	20	3	3	60	52	53
	Deaths ... 11	...	1	...	2	...	1	...	...	...	...	...	...	...	1	...	...	1	...	...	1	...	2	...	1	...	...	...	...	...	1	...
	Invaliding ... 44	...	...	...	...	...	...	...	...	1	...	...	6	8	...	...	...	...	...	1	1	...	3	1	16	...	...	1	...	...	1	5
11	Admissions 1,343	3	...	408	3	174	21	82	68	12	1	1	20	6	...	1	2	...	21	5	29	14	59	55	20	...	31	1	4	107	75	24
	Deaths ... 13	5	...	...	1	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...
	Invaliding ... 19	...	...	...	...	...	...	...	...	...	...	...	2	4	...	1	...	...	2	2	1	...	...	...	3	...	...	...	...	...	...	4
12	Admissions 1,408	3	8	397	3	347	21	66	97	4	1	...	24	6	...	...	...	1	24	1	34	...	56	78	8	...	19	1	10	70	65	64
	Deaths ... 12	2	1	...	2	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	...	...	1
	Invaliding ... 21	...	...	...	...	1	...	...	...	2	...	...	5	4	...	...	...	...	1	1	...	...	5	...	...	...	...	...	...	...	1	1
13	Admissions 122	...	...	...	...	23	5	8	10	...	...	...	3	...	...	3	...	...	1	...	1	2	...	8	...	...	5	...	1	10	24	18
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding ... 5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
14	Admissions 608	...	...	5	...	30	85	33	186	7	...	1	4	6	...	1	7	1	7	5	35	...	15	20	32	4	15	2	6	76	29	47
	Deaths ... 6	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	1	...	3	...	...	...	...	...	...	...
	Invaliding ... 23	...	...	...	...	3	...	...	...	1	...	...	1	4	...	1	...	...	...	2	...	...	1	...	4	...	...	1	...	1	...	4
15	Admissions 338	1	...	...	...	86	63	2	33	...	...	...	11	...	1	...	3	3	10	1	8	5	10	18	3	1	15	1	2	80	19	12
	Deaths ... 3	1	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 8	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	3	...
16	Admissions 313	...	...	...	...	120	23	5	26	4	...	...	11	...	2	...	1	...	6	...	5	3	4	22	8	...	14	1	2	22	16	18
	Deaths ... 3	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ... 6	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2
17	Admissions 1,823	...	5	...	...	850	245	23	115	30	...	1	6	10	9	2	5	1	13	2	110	4	14	77	21	...	36	...	...	121	54	69
	Deaths ... 19	...	2	...	...	...	2	...	...	...	...	...	...	3	4	...	...	...	...	3	...	...	2	...	2	...	...	...	...	...	...	1
	Invaliding ... 16	...	...	...	...	3	...	1	...	1	...	...	1	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4
18	Admissions 253	...	...	...	3	4	26	3	41	7	...	...	17	...	2	3	1	...	2	...	10	...	9	23	8	...	25	...	...	16	38	15
	Deaths ... 6	...	...	...	2	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding ... 11	...	...	...	...	...	...	1	...	1	...	...	3	...	...	1	...	...	...	...	...	...	1	1	1	...	...	...	...	...	1	1
19	Admissions 123	...	...	...	1	7	19	6	8	4	1	...	4	...	1	...	...	...	...	...	7	...	3	22	3	...	8	...	1	14	7	7
	Deaths ... 3	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 7	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	1
20	Admissions 209	...	...	2	3	14	14	11	20	9	1	...	2	3	5	4	3	...	2	...	19	...	15	20	5	...	18	1	2	16	13	7
	Deaths ... 3	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding ... 17	...	...	...	...	...	...	3	...	1	...	...	2	2	...	1	1	...	...	...	1	...	3	...	1	...	...	...	...	...	...	2
21	Admissions 240	...	...	1	...	9	24	7	36	7	...	...	6	...	...	...	...	1	2	2	5	1	19	24	9	1	9	...	2	31	36	8
	Deaths ... 4	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...
	Invaliding ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1
22	Admissions 710	...	2	2	3	56	118	17	37	11	1	...	8	7	7	1	2	3	16	7	27	11	71	48	41	...	51	...	5	89	39	32
	Deaths ... 18	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	1	...	...	9	...	3	...	...	...	...	...	...	1
	Invaliding ... 37	...	...	...	...	...	...	1	...	2	...	...	4	4	...	...	...	...	...	5	...	...	11	...	5	...	...	...	...	...	...	5
23	Admissions 1,320	...	...	5	5	22	213	39	167	34	...	...	60	7	2	2	11	10	17	7	47	1	154	142	59	1	109	2	10	96	65	39
	Deaths ... 22	...	...	...	2	...	...	...	...	...	...	...	...	1	1	...	...	...	...	3	1	...	6	...	6	...	...	1	...	...	...	1
	Invaliding ... 49	...	...	...	...	...	...	1	...	5	...	...	13	1	...	2	...	...	...	1	1	...	20	...	2	...	...	...	...	...	...	3
24	Admissions 822	1	...	...	20	3	95	22	132	22	1	...	18	...	...	...	1	2	11	5	21	...	164	45	37	...	47	...	4	88	57	28
	Deaths ... 20	1	...	...	7	...	...	...	...	1	...	...	...	1	...	...	...	1	...	1	...	...	3	...	3	...	...	...	...	...	2	...
	Invaliding ... 13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	10	...	...	...	...	...	...	...	...	1
	Admissions 12,479	9	19	1221	53	2425	1226	410	1252	195	7	3	223	75	37	23	49	30	169	45	475	65	649	711	331	21	489	15	61	950	733	505
	Deaths ... 162	10	4	...	21	...	9	...	...	2	2	1	...	12	16	1	...	2	...	14	2	...	29	...	23	...	...	2	...	...	6	6
	Invaliding ... 329	...	...	...	...	11	...	8	...	10	...	...	51	36	...	14	1	...	3	19	5	1	56	4	45	...	...	2	...	4	11	39
	SOUTHERN INDIA.																															
1	Admissions 150	...	...	30	1	3	20	2	20	3	...	...	3	2	...	...	3	2	1	1	7	...	5	4	6	...	10	...	...	8	7	12
	Deaths ... 2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ... 4	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
2	Admissions 231	...	...	35	2	2	14	4	22	3	...	...	2	4	1	...	7	2	7	...	5	1	13	8	10	1	9	...	1	24	18	20
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	Invaliding ... 11	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...	...	...	1	...	2	1	...	...	...	...	...	3
3	Admissions 176	...	...	42	...	...	8	2	21	7	...	...	2	1	2	...	5	...	...	1	5	...	3	2	14	...	6	...	8	17	19	11
	Deaths ... 4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ... 6	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	1	1	1

TABLE

REGIMENTS of

	REGIMENTS & BATTERIES & STATION OF 1872.	Date of Arrival in India.	Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Average Strength.	Loss per 1,000. By Deaths.	Loss per 1,000. By Invaliding.
4	2-21st Regiment, Madras, with Detachment of 170 men at Trichinopoly ...	October 1863 ...	February 1872, from Thayetmyo and Toungoo ...	843	1670·2	16·61	11·86‖
5	V Brig., 7 Battery, R. Art., Madras ...	...	December 1871, from Bellary ...	104	1788·5	9·62	28·84
6	XX Brig., B. Battery, R. Art., Trichinopoly ...	...	October 1869, from St. Thomas' Mount...	158	1196·2	18·99	69·62
7	89th Regiment, Cannanore ...	November 1870 ...	November 1870, from England ...	899	1155·7	11·12	46·72
8	V Brig., 1 Battery R. Art., Cannanore ...	January 1867 ...	November 1871, from St. Thomas' Mount	89	1809·0	...	112·36
9	18th Hussars, Bangalore ...	September 1864 ...	January 1872, from Secunderabad ...	465	1204·3	23·66	25·81
10	1-21st Regiment, Bangalore ...	March 1869 ...	January 1870, from Kurrachee ...	950	1009·5	14·74	54·74
11	D. Brig., B Battery, R. H. Art., (11 months) Bangalore ...	...	December 1871, from Bellary ...	191	1586·4	15·71	...‖
12	XX Brig. F Battery, R. Art., Bangalore ...	...	December 1871, from Cannanore ...	158	1822·8	18·99	37·98
13	XXIII Brig., C Battery, R. Art., Bangalore* ...	...	October 1869, from Trichinopoly ..	131	1168·0	30·53	15·27
14	48th Regiment, Bellary ..	March 1872 ...	March 1872, from Malta ...	918	976·0	5·45	3·27
15	XXIII Brig., D Battery, R. Art., Bellary† ...	...	December 1871, from Bangalore ...	122	1516·4	8·20	81·97
			REGIMENTS OF SOUTHERN INDIA ...	5,387	1276·0	14·11	33·79

4.—REGIMENTS of

	REGIMENTS & BATTERIES & STATION OF 1872.	Date of Arrival in India.	Date of Arrival from Station previously occupied.	Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Average Strength.	Loss per 1,000. By Deaths.	Loss per 1,000. By Invaliding.
1	2-10th Regiment, Rangoon, with Detachment of 110 men at Port Blair. ...	January 1865 ...	January 1871, from Secunderabad ...	778	875·3	12·85	10·28‖
2	V Brig., 2 Battery, R. Art., Rangoon ...	January 1867 ...	December 1871, from Madras ...	88	1193·2	11·36	56·82
3	V Brig., 6 Battery, R. Art., Rangoon ...	January 1867 ...	January 1872, from St. Thomas' Mount	85	1458·8	23·53	47·06
4	45th Regiment, Wing, Toungoo ...	June 1868 ..	February 1872, from Madras ...	369	962·1	24·39	...§
5	V Brig., 4 Battery, R. Art., Toungoo ...	November 1867 ...	November 1871, from Rangoon ...	94	1595·7	21·28	42·55
6	45th Regiment, Hd. Qrs., Thayetmyo ...	June 1868 ...	February 1872, from Madras ..	555	1005·4	12·61	28·14§
7	XXIII Brig., B Battery, R. Art., Thayetmyo‡ ...	...	January 1871, from St. Thomas' Mount...	136	992·7	14·71	36·76
			REGIMENTS OF BURMAH AND PEGU ...	2,105	1001·4	15·68	24·70

		Average Strength during 1872.	Admission-rate of 1872 per 1,000 of Average Strength.	Loss per 1,000. By Deaths.	Loss per 1,000. By Invaliding.
1	ARMY OF BENGAL	36,591	1489·8	27·25	43·73¶
2	ARMY OF MADRAS	11,369	1331·6	18·47	41·96¶
3	ARMY OF BOMBAY	10,734	1562·0	18·91	42·46¶
4	ARMY OF INDIA	58,694	1472·3	24·02	43·21¶

---

* G Battery, 20th Brigade, from September 1872.
† G Battery, 18th Brigade, from September 1872.
‡ F Battery, 20th Brigade, from September 1872.
§ Ratio given for the Regiment as a body.
‖ Took home their Invalids.
¶ See Note to Table XXIX.

XXXII,—(concluded).

SOUTHERN INDIA,—(continued).

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Causes of Admissions into Hospital, of Deaths in and out of Hospital, and of the Invaliding of 1872.																														
		Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
4	Admissions 1,408	...	...	298	...	30	155	54	93	15	...	...	60	7	3	3	7	8	22	3	99	2	24	43	54	...	134	2	5	112	105	70
	Deaths ... 14	...	...	...	...	...	...	...	...	...	...	...	...	1	4	1	...	...	...	1	...	...	...	...	2	...	...	1	...	...	3	1
	Invaliding ... 10	...	...	...	...	...	...	...	...	...	...	...	2	3	...	1	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	1
5	Admissions 186	...	...	39	...	4	22	16	6	2	...	...	5	...	1	...	1	...	1	1	7	...	3	6	8	...	14	...	6	11	25	8
	Deaths ... 1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 3	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
6	Admissions 189	...	...	5	...	26	9	1	9	...	...	...	1	...	2	1	...	...	1	8	3	...	5	7	24	1	26	...	2	19	23	16
	Deaths ... 3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
	Invaliding ... 11	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	5	...	...	1	...	1	...	...	...	...	...	...	2
7	Admissions 1,039	...	...	9	2	41	154	25	73	21	...	...	68	19	2	2	7	7	3	9	43	3	160	20	67	...	92	...	10	66	68	68
	Deaths ... 10	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	3	...	4	...	...	...	...	...	...	...
	Invaliding ... 42	...	...	...	...	...	...	...	...	3	...	...	7	5	...	1	...	...	...	5	...	...	6	...	6	...	...	...	...	...	1	8
8	Admissions 161	...	...	28	...	1	19	5	7	1	...	...	15	5	...	2	...	1	1	...	2	...	6	3	10	1	15	...	...	18	9	12
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 10	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	1	...	...	1	...	1	1	...	...	...	...	...	2
9	Admissions 560	...	...	3	3	5	67	27	60	3	2	...	6	4	1	...	3	2	10	11	41	...	35	33	34	3	27	1	10	63	70	36
	Deaths ... 11	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...	...	3	...	2	...	...	...	...	...	...	...
	Invaliding ... 12	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	...	...	...	1	2	...	...	...	2	...	...	...	...	...	1	2
10	Admissions 959	...	6	7	5	33	40	74	138	27	...	...	61	24	1	4	19	2	22	7	35	2	17	18	40	11	80	2	9	108	93	74
	Deaths ... 14	...	...	...	4	...	...	...	...	1	...	...	...	4	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...
	Invaliding ... 52	...	...	...	...	...	...	7	...	2	...	...	8	8	2	3	...	...	...	2	1	...	...	...	10	1	...	...	...	...	...	8
11	Admissions 303	...	2	...	5	24	6	6	22	5	1	...	11	...	2	1	...	...	9	...	27	...	2	33	5	...	45	...	3	38	42	14
	Deaths ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
	Invaliding	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	Admissions 288	...	...	1	5	23	7	...	26	4	...	...	2	2	...	...	2	...	...	1	11	...	7	38	14	1	62	...	5	37	31	9
	Deaths ... 3	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ... 6	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1	1	2	...	...	...	...	...	...	...
13	Admissions 153	...	2	1	4	8	4	...	9	...	...	...	1	...	1	...	...	...	2	2	10	...	3	9	5	...	32	...	1	20	35	4
	Deaths ... 4	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
	Invaliding ... 2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
14	Admissions 806	...	...	...	1	8	135	31	214	9	3	1	3	5	1	3	2	...	37	...	37	3	27	81	16	1	41	...	6	111	74	46
	Deaths ... 5	...	...	...	1	...	1	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	1
15	Admissions 185	...	1	1	...	15	1	7	20	12	...	...	3	1	...	...	...	...	4	2	13	...	5	3	3		46	...	1	20	14	13
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 10	...	...	...	...	...	...	...	...	2	...	...	7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admissions 6,874	...	11	499	28	223	661	254	740	112	6	1	243	74	17	16	56	24	120	46	345	11	315	308	316	19	639	5	67	672	633	413
	Deaths ... 76	...	...	...	11	...	1	...	...	2	...	...	...	9	13	2	...	1	...	6	...	...	7	...	14	...	...	1	...	1	6	2
	Invaliding ... 182	...	...	...	...	1	...	8	...	8	...	...	29	27	3	7	...	...	...	15	7	...	13	2	25	3	...	...	...	1	4	29

BURMAH and PEGU.

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 681	...	...	157	2	27	16	11	56	61	1	...	10	7	...	1	3	...	5	3	14	2	82	17	41	...	52	...	11	33	52	17
	Deaths ... 10	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...	1	...	2	...	...	...	...	...	4	...
	Invaliding ... 8	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	2
2	Admissions 105	...	...	16	...	7	...	2	6	...	...	...	4	...	...	...	...	...	1	...	2	...	...	3	8	...	11	...	...	21	18	6
	Deaths ... 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	Invaliding ... 5	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
3	Admissions 124	...	...	19	...	5	1	10	5	...	...	...	3	2	1	...	1	...	...	1	5	...	3	3	13	...	13	...	...	25	11	3
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
	Invaliding ... 4	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
4	Admissions 355	...	...	43	...	30	4	7	43	16	...	...	20	3	...	...	6	3	2	3	13	1	32	23	38	...	4	1	1	32	16	8
	Deaths ... 9	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	1	...	2	...	...	3	...	...	...	...	...	...	...	...	...
	Invaliding ... ...*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Admissions 150	...	...	24	...	12	6	1	6	...	...	5	3	1	...	...	...	1	1	...	4	...	30	2	20	...	6	1	1	20	3	3
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
	Invaliding ... 4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1
6	Admissions 558	...	...	142	...	10	14	20	46	12	...	...	43	6	...	2	...	3	10	5	15	...	16	24	27	...	25	1	11	36	50	40
	Deaths .. 7	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	3	...	...	1	...	...	...	...
	Invaliding ... 26	...	...	...	...	...	...	...	...	2	...	...	10	...	...	...	...	...	...	1	...	...	1	5	2	...	...	1	...	...	1	3
7	Admissions 135	...	...	6	...	1	7	1	8	4	...	...	3	1	...	...	...	...	2	2	5	...	4	2	15	...	14	...	15	17	15	13
	Deaths ... 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...
	Invaliding ... 5	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
	Admissions 2,108	...	...	407	2	92	48	52	170	93	1	5	92	20	1	3	10	7	21	14	58	3	167	74	162	...	125	3	39	184	165	90
	Deaths ... 33	...	...	...	...	...	...	...	...	...	...	...	...	4	2	1	...	2	...	6	...	...	4	...	7	...	...	1	...	...	5	1
	Invaliding ... 52	...	...	...	...	...	...	...	...	4	...	...	15	3	...	1	...	...	...	1	1	...	3	5	6	...	...	1	...	...	2	10

	Total Admissions and Loss of the Year by Deaths and Invaliding.	Cholera.	Smallpox.	Dengue.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Rheumatism and Rheumatic Affections.	Primary Venereal Affections.	Secondary Venereal Affections.	Erysipelas.	Scurvy.	Anæmia and Debility.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Epilepsy and other Brain Affections.	Neuralgic Affections.	Delirium Tremens.	Ophthalmia.	Heart Disease and Aneurism.	Tonsillitis, Bronchitis, and Asthma.	Pleurisy and Pneumonia.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Functional derangements of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Abscess and Ulcer.	Injuries and Accidents.	All other Causes.
1	Admissions 54,513	589	25	3049	102	13142	4871	1869	5865	836	77	17	1007	334	147	138	319	147	879	220	2335	357	1263	2772	2032	239	2201	111	509	2890	3068	2194
	Deaths ... 997	390	7	...	58	4	61	1	...	1	4	1	3	34	67	15	...	4	...	42	9	30	63	9	86	1	...	5	...	4	62	37
	Invaliding .. 1,578	...	...	...	...	31	11	96	...	67	...	...	338	161	7	41	11	...	11	93	51	7	58	26	236	24	...	29	6	21	33	220
2	Admissions 15,139	2	18	916	65	1486	1549	441	1525	333	11	7	473	121	47	31	93	51	220	84	662	39	948	823	672	22	1090	13	134	1379	1142	730
	Deaths ... 210	2	2	...	25	...	8	...	...	3	1	...	...	19	27	3	...	4	...	22	1	...	32	...	30	...	...	3	...	1	13	8
	Invaliding .. 401	...	...	...	...	6	...	15	...	22	...	...	74	40	3	14	1	...	...	24	10	1	62	9	44	3	...	1	...	1	12	59
3	Admissions 16,767	43	13	2466	42	5645	845	449	1469	151	8	4	247	97	54	23	48	45	195	32	421	65	360	689	353	37	445	24	89	984	866	558
	Deaths ... 203	36	2	...	24	2	6	...	...	2	1	1	...	18	28	2	...	2	...	10	1	6	14	...	20	...	...	2	...	...	18	9
	Invaliding ... 436	...	...	...	...	24	...	16	...	18	...	...	119	49	3	15		...	5	12	11	1	20	3	57	1	...	9	...	7	14	52
4	Admissions 86,419	634	56	7331	209	20273	7265	2759	8859	1320	96	28	1727	552	248	192	460	243	1294	336	3418	461	2571	4284	3057	298	3742	148	732	5253	5076	3488
	Deaths ... 1,410	428	11	...	107	6	75	1	...	6	6	2	3	71	112	20	...	10	...	74	11	44	109	9	142	1	...	10	...	5	93	54
	Invaliding ... 2,415	...	...	...	...	61	11	127	...	107	...	...	531	250	13	70	12	...	16	129	72	9	140	38	337	28	...	39	6	29	59	331

---

* See Head Quarters.

EUROPEAN TROOPS, 1872.

XXXIII.

TABLE showing the NUMBER of DAYS spent in HOSPITAL by the MEN of each REGIMENT.

BENGAL PRESIDENCY.

STATION.	Regiment.	Average Strength for the Year.	Aggregate of the Number of Days spent in Hospital.	Average Number of Days per Man.
Fort William ...	1-14th Regiment ...	853	25,636	30·0
	XIII Brigade, 2 Battery	86	3,840	44·5
Dum-Dum and Barrackpore ...	107th Regiment ...	871	12,332	14·2
Barrackpore ...	VIII Brigade, F Battery ...	129	2,963	23·0
	XVI Brigade, B Battery ...	142	3,593	25·3
Hazareebaugh ...	63rd Regiment ...	920	15,086	16·4
Dinapore ...	96th Regiment ...	825	22,713	27·5
	VIII Brigade, B Battery ...	123	3,528	28·6
Benares ...	1-3rd Regiment, Wing ...	404	(8,244)	20·4
	VIII Brigade, D Battery ...	129	2,995	23·2
Fyzabad ...	26th Regiment ...	858	15,148	17·7
	XVI Brigade, E Battery ...	139	2,319	16·6
Lucknow ..	21st Hussars ...	433	9,220	21·3
	1-17th Regiment ...	919	20,598	22·4
	62nd Regiment ...	827	14,050	17·0
	F Brigade, A Battery ..	148	3,640	24·6
	VIII Brigade, C Battery ...	126	4,689	37·2
	XXIV Brigade, 6 Battery (XXIII-6 from September)...	103	3,049	29·5
Seetapore ...	1-3rd Regiment, Head Quarters (with Wing at Benares)	480	15,324	14·8
	XVI Brigade, A Battery ...	134	2,931	21·9
Cawnpore ...	1-8th Regiment ...	855	24,269	28·4
	XIX Brigade, A Battery ...	139	5,831	42·0
Allahabad ..	2-19th Regiment ...	825	18,670	22·6
	XIX Brigade, E Battery ...	148	3,337	22·5
	XXIV Brigade, 7 Battery (XXIII-7 from September)...	91	768	8·4
Shahjehanpore ...	2-1st Regiment, Head Quarters (with Wing at Raneekhet) ...	423	19,721	18·5
Bareilly ...	1-5th Regiment ...	944	16,012	17·0
	XXIII Brigade, E Battery (XVI-G from September) ...	150	3,858	25·7
Roorkee ...	109th Regiment (with Wing at Delhi) ...	407	24,072	23·6
Meerut ...	4th Hussars ...	442	10,895	24·6
	105th Regiment ...	719	12,873	17·9
	D Battery, D Brigade ...	151	3,116	22·6
	F Brigade, E Battery ...	149	4,010	27·0
	XVI Brigade, F Battery ...	137	3,182	23·2
	XIX Brigade, D Battery ...	137	3,393	24·8
Delhi ...	109th Regiment, Wing ...	439	(14,452)	32·9
	XXIV Brigade, 2 Battery (XXIII-2 from September)	102	1,843	18·1
Muttra ...	11th Hussars ...	455	7,929	17·4
Agra ...	65th Regiment ...	944	16,437	17·4
	XIX Brigade, F Battery ..	145	3,484	24·0
	XXIV Brigade, 5 Battery (XXIII-5 from September)	93	1,892	20·4
Morar ...	1-11th Regiment ...	888	16,101	18·1
	F Brigade, B Battery ...	153	3,638	23·7
	XVI Brigade, C Battery ...	140	2,178	15·6
	XXIV Brigade, 1 Battery (XXIII-1 from September)	99	2,108	21·2
Gwalior Fortress	Detachment, 106th Regiment	265	5,785	21·8
	XXIV Brigade, 4 Battery (XXIII-4 from September)	94	2,368	25·2
Jhansi ...	106th Regiment, Head Quarters ...	462	7,609	16·5
Nowgong ...	Detachment, 106th Regiment	170	3,721	21·9
	XXIII Brigade, F Battery (XIX-G from September) ...	155	2,719	17·5
Saugor ...	VIII Brigade, E Battery ...	125	2,627	21·0
Jubbulpore and Saugor ...	2-25th Regiment ...	910	14,889	16·4
Umballa ...	20th Hussars (10½ months)...	375	3,390	10·8
	72nd Regiment ...	901	16,634	18·5
	F Brigade, C Battery ...	149	3,653	24·5
	F Brigade, F Battery ...	154	3,017	19·6
Jollundur ...	54th Regiment ...	909	20,156	22·2
	VIII Brigade, G Battery ...	140	3,207	22·9
Ferozepore ...	39th Regiment ...	936	12,623	13·5
	XIII Brigade, 3 Battery ...	83	2,794	33·7
	XIX Brigade, B Battery ...	149	3,241	21·8
Mooltan ...	41st Regiment ...	880	15,941	18·1
	XIX Brigade, C Battery ...	147	3,256	22·1
Sealkote ...	5th Lancers .	454	8,385	18·4
	68th Regiment ...	851	16,046	18·8
	A Brigade, E Battery ...	154	2,355	15·3
Umritsur ...	XIII Brigade, 4 Battery ..	82	1,523	18·6
Meean Meer ...	37th Regiment ...	849	25,517	30·1
	A Brigade, A Battery ..	137	4,437	32·4
	VIII Brigade, H Battery ...	131	2,599	19·8
	XIII Brigade, 7 Battery ...	86	3,226	37·5
Rawul Pindee ...	36th Regiment ...	913	10,038	11·0
	70th Regiment ..	879	23,767	27·0
	A Brigade, B Battery ...	151	2,740	18·2
	XIII Brigade, 1 Battery ...	98	1,475	15·0
	XVI Brigade, D Battery ...	157	2,611	16·6
Campbellpore ...	A Brigade, D Battery ...	151	2,494	16·5
Attock ...	XIII Brigade, 5 Battery ...	89	3,311	37·2
Nowshera ...	2-60th Regiment ...	1,064	22,520	21·2
Peshawur ...	1-6th Regiment ...	883	19,064	21·6
	55th Regiment ...	880	17,649	20·1
	A Brigade, C Battery ...	161	4,618	28·7
	XX Brigade, F Battery (VIII-A from September) ...	129	2,753	21·3
	XXIV Brigade, 3 Battery (XXIII-3 from September)	94	2,013	21·4
Darjeeling ...	V Brigade, 3 Battery ...	84	1,138	13·4
Raneekhet ...	2-1st Regiment, Wing ...	474	(11,880)	25·1
Chuckrata ...	92nd Regiment ...	895	10,843	12·1
Dugshai ...	85th Regiment ...	935	13,080	14·0
Subathoo ...	2-12th Regiment ...	913	14,324	15·7
Jutogh ...	XIII Brigade, 6 Battery ...	99	1,328	13·3
Detachments ...	Road-making, Murree Hills...	668	(4,599)	6·9

MADRAS PRESIDENCY.

STATION.	Regiment.	Average Strength for the Year.	Aggregate of the Number of Days spent in Hospital.	Average Number of Days per Man.
Kamptee ...	44th Regiment ...	900	19,839	22·0
	IX Brigade, C Battery ...	164	4,104	25·0
	XX Brigade, D Battery ...	145	3,853	26·5
Secunderabad ...	2-24th Regiment (11 months)	864	13,653	17·8
	76th Regiment ...	912	22,616	24·8
	16th Lancers ...	466	12,112	26·0
	D Brigade, A Battery ...	146	3,542	27·0
	V Brigade, 5 Battery ...	94	2,120	22·5
	IX Brigade, G Battery ...	146	4,359	29·9
	XX Brigade, C Battery ...	151	4,472	29·6
Madras ..	21st Regiment ...	843	13,620	16·2
	V Brigade, 7 Battery ...	104	2,315	22·3
St. Thomas' Mount	VI Brigade, 7 Battery ...	85	1,729	20·3
	XX Brigade, A Battery (IX-A from September) ...	157	4,432	28·2
	XXIII Brigade, A Battery (XX-A from September) ...	133	2,684	20·2
Trichinopoly ..	XX Brigade, B Battery ...	158	4,164	26·3
Bangalore ...	1-21st Regiment ...	950	20,470	21·5
	18th Hussars ...	465	8,993	19·3
	D Brigade, B Battery ...	191	3,742	21·4
	XX Brigade, E Battery ...	158	4,148	26·2
	XXIII Brigade, C Battery (XX-G from September) ...	131	1,722	13·1
Bellary ..	48th Regiment ..	918	13,658	14·9
	XXIII Brigade, D Battery (XVIII-G from September)	122	2,544	20·9
Cannanore ...	89th Regiment ...	899	19,985	22·2
	V Brigade, 1 Battery ..	89	2,305	25·9
Rangoon ...	2-10th Regiment ...	778	11,705	15·0
	V Brigade, 2 Battery ...	88	1,446	16·4
	V Brigade, 6 Battery ...	85	1,910	22·4
Toungoo ...	V Brigade, 4 Battery ...	94	2,251	24·0
	45th Regiment, Wing ...	369	19,343	21·0
Thayetmyo ...	45th Regiment, Hd. Qrs. ...	555		
	XXIII Brigade, B Battery (XX-F from September) ...	136	2,379	17·5

BOMBAY PRESIDENCY.

STATION.	Regiment.	Average Strength for the Year.	Aggregate of the Number of Days spent in Hospital.	Average Number of Days per Man.
Nusseerabad ...	59th Regiment ...	887	17,445	19·7
	IX Brigade, D Battery ...	136	2,695	19·8
Neemuch ...	XVIII Brigade, D Battery ..	151	3,296	21·8
Mhow ...	40th Regiment ...	891	18,809	21·1
	15th Hussars	480	9,028	18·8
	D Brigade, E Battery (11 months) ...	168	3,583	23·3
	VI Brigade, 1 Battery ...	82	1,030	12·6
Deesa ...	108th Regiment ...	910	22,565	24·8
	IX Brigade, E Battery ...	144	4,133	28·7
Ahmedabad ...	XVIII Brigade, C Battery ..	143	2,810	19·7
Kurrachee ...	66th Regiment .	924	15,341	16·6
	IX Brigade, B Battery ...	148	2,112	14·3
Hyderabad ...	XVIII Brigade, B Battery ...	145	3,159	21·8
Aden ...	3-60th Regiment (11 months)	563	6,579	12·7
	VI Brigade, 4 Battery .	76	1,302	17·1
	VI Brigade, 5 Battery ...	79	1,405	17·8
Bombay ...	VI Brigade, 2 Battery ...	78	1,352	17·3
	VI Brigade, 3 Battery ..	77	1,396	18·1
	VI Brigade, 6 Battery and Head Quarters .	81	2,291	28·3
Ahmednuggur ...	3rd Hussars ..	475	7,931	16·7
	D Brigade, C Battery (10 months) ..	167	2,474	17·8
Poona ..	68th Regiment (0 months) ..	873	13,863	19·8
	83rd Regiment ..	884	13,388	15·1
	56th Regiment ...	922	16,801	18·2
Kirkee ...	IX Brigade, F Battery ...	146	3,203	21·9
	XVIII Brigade, E Battery ..	139	1,873	13·5
	XVIII Brigade, F Battery ...	155	2,419	15·6
Belgaum ...	1-2nd Regiment ...	929	12,221	13·2
	XVIII Brigade, A Battery ...	148	1,562	10·6

Aggregate of Hospital Diets (Days in Hospital) derived from the Weekly Returns of 1872 ... ...

Army of Bengal	..	757,827
„ „ Madras	...	250,818
„ „ Bombay	...	200,954
Army of India	..	1,209,599

Aggregate Number of Days spent in Hospital derived from the Regimental Returns contained in this Table ...

Army of Bengal	...	738,424
„ „ Madras	...	236,215
„ „ Bombay	...	195,866
Army of India	...	1,170,505

The difference arises chiefly from the fact of Regiments present for short periods being omitted in this Table. It is probable also, that in some instances the time spent in Hospital by men at Convalescent Depôts and elsewhere has been left out in making up the Statement.

EUROPEAN TROOPS, 1872.

XXXIV.

DISTRIBUTION of the EUROPEAN ARMY of the BENGAL PRESIDENCY on 28*th June* 1872.

STRENGTH OF THE ARMY ON 28TH JUNE 1872, 36,685.

	STATION.	STRENGTH.		STATION.	STRENGTH.
ARTILLERY.			INFANTRY.		
A. Horse Brigade, Head Quarters ...	Peshawur ...	5	1st Regiment, 2nd Battalion ...	Shahjehanpore ...	361
A Battery ...	Meean Meer ...	120	,, ,, ...	Raneekhet ...	496
B ,, ...	Rawulpindee ...	136	3rd ,, 1st ,, ...	Seetapore ...	490
C ,, ...	Peshawur ...	131	,, ,, ...	Benares ...	369
D ,, ...	Campbellpore ...	137	5th ,, 1st ,, ...	Bareilly ...	683
E ,, ...	Sealkote ...	145	,, ,, ...	Moradabad ...	213
D. Horse Brigade, D. Battery ...	Meerut ...	144	6th ,, 1st ,, ...	Peshawur ...	433
F. Horse Brigade, Head Quarters ...	Umballa ...	8	8th ,, 1st ,, ...	Cawnpore ...	884
A Battery ...	Lucknow ...	148	11th ,, 1st ,, ...	Morar ...	712
B ,, ...	Morar ...	141	12th ,, 2nd ,, ...	Subathoo ...	902
C ,, ...	Umballa ...	130	14th ,, 1st ,, ...	Fort William ...	819
E ,, ...	Meerut ...	144	17th ,, 1st ,, ...	Lucknow ...	870
F ,, ...	Umballa ...	139	19th ,, 2nd ,, ...	Allahabad ...	645
5th Brigade, 3rd Battery ...	Darjeeling ...	87	,, ,, ...	Fort Allahabad ...	152
8th Brigade, Head Quarters ...	Lucknow ...	6	25th ,, 2nd ,, ...	Jubbulpore ...	554
B Battery ...	Dinapore ...	116	,, ,, ...	Saugor ...	313
C ,, ...	Lucknow ...	118	20th ,, ...	Fyzabad ...	836
D ,, ...	Benares ...	122	36th ,, ...	Rawulpindee ...	619
E ,, ...	Saugor ...	114	37th ,, ...	Meean Meer ...	692
F ,, ...	Barrackpore ...	131	,, ...	Fort Lahore ...	68
G ,, ...	Jullundur ...	114	39th ,, ...	Ferozepore ...	884
H ,, ...	Meean Meer ...	124	41st ,, ...	Mooltan ...	669
13th Brigade, Head Quarters ...	Meean Meer ...	8	,, ...	Dera Ismael Khan ...	99
1 Battery ...	Murree Hills ...	100	54th ,, ...	Jullundur ...	630
2 ,, ...	Fort William ...	86	,, ...	Phillour ...	64
3 ,, ...	Ferozepore ...	83	,, ...	Bhagsoo ...	110
4 ,, ...	Umritsur ...	78	55th ,, ...	Peshawur ...	604
5 ,, ...	Fort Attock ...	74	,, ...	Cherat ...	248
6 ,, ...	Jutogh ...	99	58th ,, ...	Sealkote ...	553
7 ,, ...	Meean Meer ...	91	,, ...	Govindghur ...	217
16th Brigade, Head Quarters ...	Barrackpore ...	5	2-60th ,, ...	Nowshera ...	582
A Battery ...	Seetapore ...	125	,, ...	Attock ...	102
B ,, ...	Barrackpore ...	138	62nd ,, ...	Lucknow ...	808
C ,, ...	Morar ...	123	63rd ,, ...	Hazareebangh ...	880
D ,, ...	Rawulpindee ...	142	65th ,, ...	Agra ...	912
E ,, ...	Fyzabad ...	133	70th ,, ...	Rawulpindee ...	566
F ,, ...	Meerut ...	138	72nd ,, ...	Umballa ...	650
19th Brigade, Head Quarters ...	Meerut ...	5	,, ...	Dugshaie ...	110
A Battery ...	Cawnpore ...	129	85th ,, ...	Dugshaie ...	924
B ,, ...	Ferozepore ...	139	92nd ,, ...	Chuckrata ...	894
C ,, ...	Mooltan ...	138	96th ,, ...	Dinapore ...	708
D ,, ...	Meerut ...	125	,, ...	Chunar ...	66
E ,, ...	Allahabad ...	135	105th ,, ...	Meerut ...	462
F ,, ...	Agra ...	134	,, ...	Futtehghur ...	215
20th Brigade, F* ,, ...	Peshawur ...	93	106th ,, ...	Jhansi ...	391
23rd Brigade, E† ,, ...	Bareilly ...	134	,, ...	Gwalior Fortress ...	265
F‡ ,, ...	Nowgong ...	145	,, ...	Nowgong ...	166
24th Brigade,§ Head Quarters ...	Morar ...	7	107th ,, ...	Dum-Dum ...	648
1 Battery ...	Morar ...	87	,, ...	Barrackpore ...	179
2 ,, ...	Delhi ...	89	109th ,, ...	Roorkee ...	385
3 ,, ...	Peshawur ...	57	,, ...	Delhi ...	463
4 ,, ...	Fortress Gwalior ...	95			
5 ,, ...	Agra ...	81	HILL WORKING PARTIES ...	Murree Hills ...	575
6 ,, ...	Lucknow ...	90			
7 ,, ...	Allahabad ...	79	DETACHMENTS FROM PESHAWUR	Cherat ...	576
Sappers and Miners ...	Roorkee ...	29	CONVALESCENT DEPOTS ...	Darjeeling ...	106
CAVALRY.				Nynee Tal ...	257
				Landour ...	208
4th Hussars ...	Meerut ...	424		Kussowlie ...	701
5th Lancers ...	Sealkote ...	421		Dalhousie ...	502
11th Hussars ...	Muttra ...	428		Murree ...	560
20th Hussars ...	Umballa ...	308			
21st Hussars ...	Lucknow ...	421	BOMBAY DEPOT ...	Deolalee ...	15

* A. Battery, 8th Brigade, from September.
† G Battery, 16th Brigade, from September.
‡ G Battery, 19th Brigade, from September.
§ Changed to 23rd Brigade from September.

DISTRIBUTION of the EUROPEAN ARMY of MADRAS and BOMBAY on 28th June 1872.

STRENGTH OF THE ARMY OF MADRAS ON 28TH JUNE 1872, 11,472.

	STATION.	STRENGTH.
ARTILLERY.		
D. Horse Brigade, Head Quarters	Bangalore	8
A Battery	Secunderabad	146
B „	Bangalore	159
5th Brigade, Head Quarters	St. Thomas' Mount	12
1 Battery	Cannanore	82
2 „	Rangoon	81
4 „	Toungoo	91
5 „	Secunderabad	97
6 „	Rangoon	82
Details	Rangoon	2
7 Battery	Madras	95
6th Brigade, 7 Battery	St. Thomas' Mount	80
9th Brigade, C „	Kamptee	138
G „	Secunderabad	137
20th Brigade, A. Battery*	St. Thomas' Mount	147
B „	Trichinopoly	144
C „ and Hd. Qrs.	Secunderabad	152
D „	Kamptee	143
E „	Bangalore	133
23rd Brigade, Head Quarters	Kamptee	6
A Battery†	St. Thomas' Mount	130
B „ ‡	Thayetmyo	140
C „ §	Bangalore	124
D „ ‖	Bellary	122
CAVALRY.		
16th Lancers	Secunderabad	446
18th Hussars	Bangalore	458
INFANTRY.		
10th Regiment 2nd Battalion	Rangoon	645
„ „	Port Blair	110
21st „ 1st „	Bangalore	911
21st „ 2nd „	Madras	584
„ „	Trichinopoly	172
24th „ 2nd „	Secunderabad	836
44th „	Kamptee	692
„	Seetabuldee	45
„	Puchmurree	149
45th „	Thayetmyo	453
„	Toungoo	435
48th „	Bellary	771
76th „	Secunderabad	858
89th „	Cannanore	623
	Malliapoorum	99
	Calicut	87
DEPOTS.		
	Ramandroog	60
	Wellington	430
	Poonamallee	133
	Madras	24

STRENGTH OF THE ARMY OF BOMBAY ON 28TH JUNE 1872, 10,966.

	STATION.	STRENGTH.
ARTILLERY.		
D. Horse Brigade, C Battery	Ahmednuggur	155
E „	Mhow	168
6th Brigade, 1 Battery	Mhow	82
2 „	Bombay	78
3 „	Bombay	56
4 „	Aden	78
5 „	Aden	79
6 „ and Head Quarters	Bombay	79
9th Brigade, Head Quarters	Ahmedabad	11
B Battery	Kurrachee	147
D „	Nusseerabad	144
E „	Deesa	139
F „	Kirkee	140
18th Brigade, A Battery	Belgaum	154
B „	Hyderabad	130
C „	Ahmedabad	138
D „	Neemuch	148
E „	Kirkee	140
F „ and Hd. Quarters	Kirkee	157
Detachment of Artillery	Baroda	24
Sappers and Miners	Kirkee	13
CAVALRY.		
3rd Hussars	Ahmednuggur	458
15th Hussars	Mhow	472
INFANTRY.		
2nd Regiment, 1st Battalion	Belgaum	909
49th „	Mhow	778
„	Indore	90
56th „	Poona	901
59th „	Nusseerabad	521
„	Neemuch	326
60th „ 3rd Battalion	Aden	545
66th „	Kurrachee	644
„	Hyderabad	267
68th „	Poona	874
83rd „	Poona	262
„	Bombay	254
„	Asseerghur	130
„	Sattara	209
108th „	Deesa	791
„	Mount Aboo	78
DEPOTS.		
	Poorundhur	31
	Mount Aboo	19
	Taraghur, Ajmere	45
	Ghizree	37
	Bombay	4
	Deolalee	31
	Poona	...

* A Battery, 9th Brigade, from September

† A Battery, 20th Brigade, from September.

‡ F Battery, 20th Brigade, from September.

§ G Battery, 20th Brigade, from September.

‖ G Battery, 18th Brigade, from September.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

I.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS composing the ARMY of INDIA during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each month.	Death-rate of the Year per 1,000 of Strength.	Causes of Deaths.														
						Cholera.	Smallpox.	Enteric Fever.	Fevers, Intermittent.	Fevers, Remittent and Continued.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.
January ...	6,579	158	24·0	13	...	...	...	1	...	...	...	3	1	...	2	1	1	2	2	...
February ...	6,569	185	28·2	7	...	...	1	...	...	2	...	...	1	...	...	...	...	1	1	1
March ...	6,766	179	26·4	6	...	1	...	...	...	...	...	...	1	1	1	1	...	...	1	...
April ...	6,735	241	35·8	13	...	1	1	...	...	1	1	1	1	...	2	...	1	...	1	3
May ...	6,714	297	44·2	28	...	9	...	1	...	1	2	2	1	1	5	...	1	3	1	1
June ...	6,687	309	46·2	17	...	...	...	...	...	...	8	1	...	1	4	...	2	1	...	...
July ...	6,684	321	48·0	25	...	8	...	...	...	3	...	2	...	1	4	...	1	1	5	...
August ...	6,635	424	63·9	39	...	24	...	1	1	1	...	2	4	...	4	...	1	...	1	...
September ...	6,582	448	68·1	47	..	21	...	3	...	7	...	3	3	3	3	...	2	...	...	2
October ...	6,533	355	54·3	16	...	5	...	1	...	1	..	1	2	1	1	...	1	1	...	2
November ...	6,680	260	38·9	18	..	1	...	...	...	2	...	4	3	1	1	...	...	...	5	1
December ...	6,636	188	28·3	14	...	...	...	...	...	5	...	3	3	...	1	...	...	...	1	1
						70	2	7	1	23	11	22	20	9	28	2	10	9	18	11
						Died per 1,000 of Strength.														
For the year ...	6,650	280	42·1	243	36·54	10·53	·30	4·06			1·65	3·31	3·01	1·35	4·21	·30	1·51	1·35	2·71	1·65

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	2	2	12	...	9	40	27	7	1	...	100	15·0	70·00
Smallpox ..	1	3	5	3	1	...	...	..	..	...	...	...	13	2·0	15·38
Dengue ...	3	...	12	71	65	62	98	55	132	94	38	21	651	97·9	...†
Enteric Fever ...	2	...	...	...	1	...	...	2	4	...	...	...	9	1·4	77·78
Intermittent Fevers ..	36	48	38	82	64	104	82	97	179	286	162	104	1,282	192·8	·08
Remittent and Continued Fevers ...	34	29	62	67	74	94	73	94	116	134	65	51	893	134·3	2·58
Heat Apoplexy ...	1	...	...	2	4	10	...	...	...	1	1	...	19	2·9	57·89
Dysentery ...	14	10	8	19	23	19	41	41	31	34	21	18	279	41·9	7·88
Diarrhœa ...	12	16	20	40	36	26	104	90	67	46	31	33	521	78·3	3·84
Hepatitis ...	5	10	8	20	18	15	17	10	12	11	8	8	142	21·4	6·34
Spleen Disease ...	1	...	1	...	2	...	2	3	1	2	...	2	14	2·1	...
Respiratory Diseases ...	22	16	11	18	26	13	24	16	13	32	18	13	222	33·4	·90
Phthisis Pulmonalis ...	6	4	10	6	8	9	12	5	3	1	7	7	78	11·7	35·90
Debility and Anæmia ...	109	92	76	138	132	151	146	228	176	146	80	67	1,541	231·7	·58
Rheumatism ...	16	13	13	21	18	7	18	15	10	15	13	9	168	25·3	...
Eye Diseases ...	3	1	...	28	47	25	55	124	76	53	17	8	437	65·7	...
Childbirth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...*	...
Abortion ...	5	9	13	15	14	20	14	11	13	11	9	5	139	20·9	3·60
Diseases peculiar to Women ...	13	17	12	20	15	24	25	26	24	21	9	12	218	32·8	2·76
Abscess and Ulcer ...	19	8	11	22	15	11	17	16	19	17	7	11	173	26·0	
Injuries ...	3	7	6	10	6	8	9	6	6	5	5	4	75	11·3	
All other Causes ...	41	55	78	85	76	61	108	80	50	49	41	43	767	115·3	
	346	338	386	669	657	659	854	959	959	965	533	416	7,741		
	Admitted per 1,000 of the Average Strength in each Month.														
	52·6	51·4	57·1	99·3	97·8	98·5	127·8	144·5	145·7	147·7	79·8	62·7	1164·1		

* Childbirth is not reckoned as a cause of admission into hospital. † One death only was returned under the head of Dengue.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

II.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMENTS composing the ARMY of INDIA during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dentition.	Convulsions.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.
January ...	11,338	256	22·6	37	3·26	...	1	5	...	...	...	...	1	...	3	5	1	1	...	1	3	7	4	2	3
February ...	11,337	261	23·0	31	2·73	...	1	3	...	...	...	...	..	...	1	7	1	1	...	...	4	5	6	1	1
March ...	11,775	280	23·8	59	5·01	...	2	9	...	2	...	...	3	...	4	6	3	2	...	2	5	8	8	...	5
April ...	11,730	369	31·5	93	7·93	2	1	4	...	1	2	..	8	1	6	16	8	3	...	2	18	9	3	.	9
May ...	11,757	495	42·1	122	10·38	9	1	1	1	1	...	...	10	1	8	24	7	8	1	3	21	16	2	3	5
June ...	11,756	500	42·5	83	7·06	..	...	2	...	2	...	...	8	1	5	16	3	1	1	5	18	8	8	...	5
July ...	11,810	547	46·3	117	9·91	8	...	2	...	...	1	..	9	...	6	15	3	3	1	11	21	23	5	4	5
August ...	11,783	742	63·0	193	16·38	54	...	1	...	...	...	5	5	...	25	20	1	6	..	5	40	13	5	1	3
September ...	11,732	752	64·1	159	13·55	30	...	...	...	...	...	1	12	...	19	19	5	9	..	7	30	14	5	2	6
October ...	11,664	584	50·1	119	10·20	13	...	...	1	...	2	...	10	...	9	23	2	4	...	3	24	14	5	5	4
November ...	11,677	429	36·7	67	5·74	2	...	...	1	...	...	3	7	...	3	12	3	3	..	3	14	8	1	3	4
December ...	11,518	286	24·8	75	6·51	...	...	...	...	...	...	1	3	...	3	8	1	5	...	2	15	16	8	6	7
						118	6	27	3	6	5	10	76	3	92	171	38	46	3	44	222	141	60	27	57
						Died per 1,000 of Strength.																			
For the year ...	11,657	459	39·4	1,155*	99·08	10·12	·51	2·32	·26	·51	7·81			·26	7·89	14·67	3·26	3·94	·26	3·77	19·04	12·10	5·15	2·32	4·89

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	...	2	13	...	13	73	33	18	2	...	154	13·2	76·62
Smallpox ...	3	5	2	7	3	...	1	...	...	...	...	...	21	1·8	28·57
Dengue ...	7	..	26	114	105	80	160	80	172	84	34	16	878	75·3	·91†
Measles ...	84	69	101	33	21	28	19	3	5	3	...	6	372	31·9	7·26
Hooping Cough ...	7	7	1	11	6	3	3	3	...	5	4	1	51	4·4	5·88
Scarlet Fever ...	3	11	4	2	...	2	...	...	...	...	...	1	23	2·0	26·09
Enteric Fever ...	2	...	1	5	...	1	1	1	3	2	...	...	16	1·3	33·33
Intermittent Fevers ...	53	38	40	59	64	48	69	136	171	355	224	121	1,378	118·2	·73
Remittent and Continued Fevers ...	19	32	66	95	100	126	98	92	154	219	134	80	1,215	104·2	6·25
Heat Apoplexy ...	...	...	2	2	2	2	...	1	2	...	...	...	11	·9	27·27
Dysentery ...	16	9	12	30	28	20	39	50	56	29	17	16	322	27·6	13·66
Diarrhœa ...	58	34	62	163	144	102	204	278	207	114	63	55	1,484	127·3	14·96
Hepatitis ...	...	1	2	1	4	...	1	...	2	1	2	1	15	1·3	20·00
Spleen Disease ...	...	...	...	1	4	...	1	1	1	3	2	1	14	1·2	...
Respiratory Diseases ...	38	49	50	52	39	31	46	47	63	72	35	51	573	49·2	15·18
Eye Diseases ...	17	16	10	118	166	79	252	488	231	145	30	10	1,562	134·0	...
Anæmia and Debility ..	71	40	58	99	103	125	154	135	115	176	100	88	1,279	109·7	11·03
Tubercular Diseases ...	3	3	8	10	21	9	11	14	10	12	9	5	115	9·9	42·61
Meningitis and Hydrocephalus ...	1	1	3	11	8	6	6	5	5	4	6	1	57	4·9	66·67
Convulsions ...	6	7	11	24	31	18	20	24	23	33	14	14	225	19·3	76·00
Dentition ...	13	9	27	39	36	36	33	70	60	41	17	20	401	34·4	22·94
Abscess and Ulcer ...	6	5	8	18	21	25	25	12	16	14	8	10	168	14·4	5·31
Injuries ...	12	14	20	13	12	15	18	11	10	18	9	12	164	14·1	
All other Causes ...	48	55	60	61	39	36	50	32	44	40	33	36	534	45·9	
	467	414	574	970	970	792	1,234	1,556	1,383	1,388	740	545	11,032		
	Admitted per 1,000 of the Average Strength in each Month.														
	41·2	36·5	48·7	82·7	82·5	67·4	103·6	132·1	117·9	119·0	64·1	47·3	946·4		

---

* Excluding 35 deaths, which appear in the Regimental Returns, of stillborn children and premature children who survived their birth for a short time.

† Eight deaths of children were returned under the head of Dengue.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

III.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS serving in the BENGAL PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each month.	Death-rate of the Year per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.
January ...	3,773	105	27·8	12	...	...	...	1	...	...	...	3	1	...	2	1	...	2	2	...
February ...	3,816	114	29·9	6	...	...	1	...	...	2	...	...	1	...	...	...	...	1	...	1
March ...	3,875	100	25·8	4	...	1	...	...	...	...	...	...	1	1	...	1	...	...	...	...
April ...	3,881	147	37·9	6	...	...	...	...	...	...	...	1	...	...	1	...	1	...	1	2
May ...	3,876	192	49·5	15	...	4	...	1	...	...	2	2	..	1	2	...	1	1	1	...
June ...	3,873	198	51·1	7	...	...	...	...	...	...	2	1	...	...	2	...	1	1	...	...
July ...	3,871	205	53·0	19	...	6	...	...	...	3	...	1	...	1	2	...	1	1	4	...
August ...	3,830	283	74·0	35	..	23	...	1	1	...	...	2	3	...	3	...	1	...	1	...
September ...	3,786	319	84·3	37	...	21	...	2	..	6	...	2	2	2	1	...	1	...	...	...
October ...	3,754	249	66·3	12	...	5	...	...	...	1	...	1	..	...	1	...	1	1	...	2
November ...	3,861	186	48·2	11	...	1	...	...	...	1	...	1	2	1	1	...	...	...	3	1
December ...	3,866	130	33·7	13	...	...	...	...	..	5	...	3	2	...	1	...	...	...	1	1
						61	1	5	1	18	4	17	12	6	16	2	7	7	13	7
						Died per 1,000 of Strength.														
For the year ...	3,838	186	48·5	177	46·12	15·89	·26	1·30	4·95		1·04	4·43	3·13	1·56	4·17	·52	1·83	1·83	3·38	1·83

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	1	1	7	...	8	38	27	7	1	...	90	23·4	67·78
Smallpox ...	1	2	...	...	1	...	...	...	...	...	...	...	4	1·0	25·00
Dengue ...	...	...	2	32	14	5	37	27	115	84	22	15	353	92·0	...
Enteric Fever ...	1	...	...	...	1	...	...	2	2	...	...	...	6	1·6	83·33
Intermittent Fevers ..	17	28	19	46	41	73	49	58	85	166	114	49	745	194·1	...
Remittent and Continued Fevers ...	10	13	33	42	48	68	53	84	96	111	48	41	647	168·6	2·78
Heat Apoplexy ...	...	...	...	1	4	4	...	...	...	1	1	...	11	2·9	36·36
Dysentery ...	8	7	5	17	15	12	29	27	15	24	12	13	184	47·9	9·24
Diarrhœa ...	7	10	13	21	27	15	56	64	54	34	21	21	343	89·4	3·50
Hepatitis ...	3	6	5	16	12	11	11	6	7	6	5	5	93	24·2	6·45
Spleen Disease ...	1	...	...	...	2	...	2	3	1	2	...	1	12	3·1	...
Respiratory Diseases ...	12	9	7	10	19	8	17	12	5	21	11	6	137	35·7	1·46
Phthisis Pulmonalis ..	3	1	6	4	3	3	9	4	2	1	3	6	45	11·7	35·56
Debility and Anæmia ...	71	58	44	89	81	90	77	153	110	92	58	33	956	249·1	·73
Rheumatism .	12	11	6	15	10	5	8	9	5	8	10	6	105	27·3	...
Eye Diseases ...	1	...	...	24	45	23	39	81	48	25	7	3	296	77·1	...
Childbirth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abortion ..	4	7	11	10	10	13	10	7	7	8	5	2	94	24·5	4·26
Diseases peculiar to Women ...	9	7	6	12	8	18	17	15	17	12	4	8	133	34·7	2·12
Abscess and Ulcer ...	10	1	6	13	8	5	11	11	12	10	4	11	102	26·6	
Injuries ...	3	2	3	4	6	4	5	3	5	2	3	3	43	11·2	
All other Causes ...	18	26	32	46	29	34	47	45	31	31	27	15	381	99·3	
	191	188	199	403	391	391	485	649	644	645	356	238	4,780		
	Admitted per 1,000 of the Average Strength in each Month.														
	50·6	49·3	51·3	103·8	100·9	101·0	125·3	169·4	170·1	171·8	92·2	61·6	1245·4		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

IV.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMENTS serving in the BENGAL PRESIDENCY during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	Causes of Deaths.																			
						Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dentition.	Convulsions.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.
January ...	6,336	157	24·8	19	3·00	...	1	2	...	...	...	...	1	...	1	3		1	...	...	1	3	1	2	3
February ...	6,433	163	25·3	13	2·02	...	...	1	...	...	...	..	...	...	...	1	1	1	...	...	2	1	5	1	...
March ..	6,613	161	24·3	19	2·87	...	1	2	.	...	...	...	1	..	1	3	...	1	..	2	1	2	5	...	...
April ...	6,617	254	38·4	55	8·31	...	...	2	..	1	...	...	6	1	4	9	3	2	...	.	13	6	2	...	6
May ...	6,620	354	53·5	79	11·94	4	1	1	1	1	.	...	7	...	6	11	6	6	...	1	19	10	1	3	1
June ..	6,623	347	52·4	55	8·30	...	...	2	...	2	...	...	7	1	3	8	2	1	1	3	12	6	4	..	3
July ...	6,626	362	54·6	65	9·81	8	...	2	...		1	...	6	...	2	4	2	1	1	7	11	14	2	2	2
August .	6,597	502	76·1	140	21·07	54	...	1	...	...	...	...	1	...	21	17	1	3	...	3	25	9	4	...	1
September ..	6,540	525	80·3	115	17·59	28	...	.	...	...	...	1	7	...	17	11	2	6	..	5	22	10	2	1	3
October ..	6,516	387	59·4	82	12·58	13	...	...	1	...	...	...	8	...	5	15	1	3	...	1	14	8	5	4	4
November ...	6,610	305	46·1	44	6·66	2	...	...	...	...	...	1	6	.	3	7	1	1	...	2	10	4	1	2	4
December ...	6,589	210	31·9	55	8·35	...	...	...	..	..	...	...	2	...	3	6	...	4	...	2	13	13	7	2	8
						109	3	13	2	4	1	2	52	2	66	95	19	30	2	26	143	86	39	17	30
						Died per 1,000 of Strength.																			
For the year ...	6,560	311	47·4	741	112·95	16·61	·46	1·98	·30	·61	8·39			·30	10·06	14·48	2·90	4·58	·30	3·96	21·80	13·11	5·94	2·59	4·58

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	..	...	...	...	6	...	18	73	31	18	2	...	143	21·6	76·60
Smallpox ...	2	1	1	3	1	...	...	...	...	...	...	...	8	1·2	37·50
Dengue .	...	...	5	40	25	5	57	46	137	76	29	10	430	65·6	...
Measles ...	29	39	41	25	18	28	19	...	1	1	...	4	205	31·3	6·34
Hooping Cough ...	1	4	1	9	6	3	1	2	...	5	...	1	33	5·0	6·06
Scarlet Fever ...	...	7	2	2	...	2	...	...	...	...	...	...	13	2·0	30·77
Enteric Fever ...	1	...	1	2	...	1	1	...	1	1	...	...	8	1·2	12·50
Intermittent Fevers .	34	17	19	37	40	29	38	74	69	194	154	59	764	116·5	·26
Remittent and Continued Fevers ...	10	11	22	55	49	85	73	68	125	167	106	62	833	127·0	6·24
Heat Apoplexy ...	...	...	...	2	1	2	...	1	2	...	...	...	8	1·2	25·00
Dysentery ...	8	3	8	17	17	10	18	29	34	18	11	9	182	27·8	14·28
Diarrhœa ...	25	9	35	114	89	55	113	179	142	73	33	39	906	138·1	15·78
Hepatitis ...	...	1	1	1	2	...	...	...	2	1	1	1	10	1·5	...
Spleen Disease ...	...	...	...	1	4	...	1	..	1	2	2	1	12	1·8	...
Respiratory Diseases ...	23	34	26	30	26	15	22	32	25	33	17	27	300	45·7	18·67
Eye Diseases ...	4	8	6	103	152	56	135	257	102	64	13	4	904	137·8	...
Anæmia and Debility ...	47	28	36	69	53	81	99	96	86	126	66	65	852	129·9	10·10
Tubercular Diseases ...	3	1	4	7	14	3	6	7	5	8	4	4	66	10·1	48·48
Meningitis and Hydrocephalus ...	...	1	...	6	7	3	4	4	2	3	3	...	33	5·0	57·58
Convulsions ...	3	1	4	12	13	9	4	18	13	25	8	10	120	18·3	79·17
Dentition ...	3	2	18	20	21	23	20	56	44	21	17	11	256	39·0	25·78
Abscess and Ulcer ...	2	2	1	5	10	13	11	8	11	6	4	5	78	11·9	7·32
Injuries ...	3	6	13	9	7	8	9	5	6	11	6	5	88	13·4	
All other Causes ...	25	17	20	35	17	23	24	16	19	20	16	12	244	37·2	
	223	192	264	604	578	454	668	961	858	873	492	329	6,496		
	Admitted per 1,000 of the Average Strength in each Month.														
	35·2	29·9	39·9	91·3	87·3	68·5	100·8	145·4	131·2	134·0	74·4	50·0	990·1		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

V.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS serving in the MADRAS PRESIDENCY during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of the Year per 1,000 of Strength.	CAUSES OF DEATHS. Cholera.	Smallpox.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anemia.	Childbirth and Abortion.	All other Causes.
January ...	1,483	33	22·3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
February ...	1,457	40	27·4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
March ...	1,549	46	29·7	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
April ...	1,495	51	34·1	3	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1
May ...	1,490	54	36·3	3	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...
June ...	1,475	52	35·3	3	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...
July ...	1,483	60	40·5	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...
August ...	1,477	82	55·5	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
September ...	1,474	61	41·4	3	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1
October ...	1,463	53	36·2	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
November ...	1,533	29	18·9	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...
December ...	1,559	27	17·3	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
						...	...	1	...	2	2	2	2	...	7	...	...	2	2	2
						Died per 1,000 of Strength.														
For the year ...	1,495	49	32·8	22	14·72	...	...	2·00			1·34	1·34	1·34	...	4·68	...	...	1·34	1·34	1·34

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
Cholera ...	...	...	1	...	...	...	...	...	...	...	...	...	1	·7	...
Smallpox ...	...	...	5	1	...	...	...	...	...	...	...	...	6	4·0	...
Dengue ...	3	...	1	8	27	19	13	10	10	3	...	...	94	62·9	...
Enteric Fever ...	1	...	...	...	...	...	...	...	1	...	...	...	2	1·3	50·00
Intermittent Fevers ...	3	6	8	4	8	11	8	6	26	24	8	14	126	84·3	...
Remittent and Continued Fevers ...	14	9	18	14	20	14	8	5	7	5	5	5	124	83·0	1·61
Heat Apoplexy ...	...	...	...	1	...	1	...	...	...	...	...	...	2	1·3	100·00
Dysentery ...	5	3	3	1	3	5	10	8	6	5	6	4	59	39·5	3·40
Diarrhœa ...	2	4	4	9	3	4	31	18	10	4	2	5	96	64·2	2·08
Hepatitis ...	2	2	3	3	3	3	4	3	1	4	3	2	33	22·1	...
Spleen Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Respiratory Diseases ...	8	3	2	4	4	2	4	1	1	7	3	6	45	30·1	...
Phthisis Pulmonalis ...	2	3	1	...	3	3	1	...	1	...	2	...	16	10·7	43·75
Debility and Anæmia ...	30	26	22	40	32	37	49	60	49	38	10	19	412	275·6	·49
Rheumatism ...	1	1	4	4	3	1	3	4	2	3	1	3	30	20·1	...
Eye Diseases ...	...	1	...	3	1	1	15	33	15	26	7	2	104	69·6	...
Childbirth ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abortion ...	...	2	...	4	1	3	2	2	4	3	1	2	24	16·0	4.17
Diseases peculiar to Women ...	2	7	4	4	3	1	3	5	1	6	3	1	40	26·7	·59
Abscess and Ulcer ...	5	1	2	7	5	1	3	3	6	5	3	...	41	27·4	
Injuries ...	...	3	1	3	...	1	1	1	...	1	...	1	12	8·0	
All other Causes ...	14	17	31	25	26	15	47	19	10	12	6	23	245	163·9	
	92	88	110	135	142	122	202	178	150	146	60	87	1,512		
	Admitted per 1,000 of the Average Strength in each Month.														
	62·0	60·4	71·0	90·3	95·3	82·7	136·2	120·5	101·8	99·8	39·1	55·8	1011·4		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

VI.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMENTS serving in the MADRAS PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	Causes of Deaths.																			
						Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dentition.	Convulsions.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.
January ...	2,759	65	23·6	10	3·63	...	...	3	...	...	...	...	...	...	2	1	...	...	...	...	1	1	2	...	.
February ...	2,663	58	21·8	11	4·13	...	1	1	...	...	...	...	...	...	1	5	...	..	...	...	1	2	...	...	...
March ...	2,825	63	22·3	18	6·37	...	...	4	...	1	...	...	.	...	2	1	1	...	...	..	2	3	2	...	2
April ...	2,775	49	17·7	16	5·77	...	1	...	...	...	2	...	2	...	1	2	1	1	...	1	1	2	1	...	1
May ...	2,798	63	22·5	23	8·22	...	...	...	..	...	..	...	1	1	2	10	1	...	1	...	...	4	1	...	2
June ...	2,794	67	24·0	20	7·16	...	...	...	...	...	...	...	1	...	1	7	1	...	...	1	3	1	4	...	1
July ...	2,831	97	34·3	30	10·60	...	...	...	...	...	...	...	2	...	4	3	1	...	...	3	8	4	2	2	1
August ...	2,810	132	47·0	21	7·47	...	...	...	. .	...	...	...	3	. .	1	...	...	2	...	1	12	...	...	1	1
September ...	2,819	95	33·7	13	4·61	...	...	...	...	...	...	...	3	...	...	...	1	1	...	1	2	1	1	1	2
October ...	2,789	84	30·1	12	4·30	...	...	...	...	...	1	...	...	...	...	5	...	1	...	2	1	1	...	1	...
November ...	2,839	43	15·2	8	2·82	...	...	...	...	...	...	...	1	...	...	2	2	...	...	...	3	...	...	...	...
December ...	2,823	25	8·9	9	3·19	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	4*	2
						...	2	8	...	1	3	...	13	1	14	37	8	5	1	9	34	21	13	9	12
						Died per 1,000 of Strength.																			
For the year ...	2,794	70	25·1	191	68·36	...	·72	2·86	...	·36	5·73			·36	5·01	13·24	2·86	1·79	·36	3·22	12·17	7·52	4·65	3·22	4·29

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	1	3	1	2	1	...	1	...	...	...	..	...	9	3·2	22·22
Dengue ...	7	...	2	20	37	13	26	13	20	2	...	...	140	50·1	2·14
Measles ..	36	24	37	2	..	...	...	1	...	2	...	1	103	36·9	7·77
Hooping Cough ...	6	3	...	1	...	...	...	...	...	...	...	...	10	3·6	...
Scarlet Fever ...	3	4	1	...	...	...	...	...	...	...	...	...	8	2·9	12·50
Enteric Fever ...	1	....	...	3	...	...	...	...	1	1	...	...	6	2·1	50·00
Intermittent Fevers ..	6	5	6	4	1	4	8	7	21	26	5	9	102	36·5	...
Remittent and Continued Fevers ...	4	12	21	28	39	26	18	15	15	19	6	9	212	75·9	6·13
Heat Apoplexy ...	...	...	...	...	1	...	...	...	...	...	...	...	1	·3	...
Dysentery ...	4	3	2	6	9	8	15	14	12	5	1	1	80	28·6	11·25
Diarrhœa ...	19	17	8	17	21	27	52	48	23	14	13	8	267	95·6	12·73
Hepatitis ...	...	...	1	...	...	...	...	...	...	...	1	...	2	·7	100·00
Spleen Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Respiratory Diseases ...	9	10	20	18	10	14	19	20	23	29	12	20	204	73·0	10·78
Eye Diseases ...	4	3	2	...	...	22	102	164	76	72	11	2	458	163·9	...
Anæmia and Debility ...	16	15	11	19	36	21	26	23	12	17	18	8	222	79·4	9·46
Tubercular Diseases ...	...	2	3	2	4	2	2	5	2	1	1	...	24	8·6	25·00
Meningitis and Hydrocephalus ...	...	...	1	1	1	1	2	...	1	...	3	...	10	3·6	80·00
Convulsions ...	2	5	4	6	15	8	6	2	1	4	2	3	58	20·8	63·79
Dentition ...	8	5	3	13	10	7	5	1	6	4	...	7	69	24·7	20·29
Abscess and Ulcer ...	4	1	5	13	9	4	6	2	1	6	3	1	55	19·7	2·43
Injuries ...	4	5	3	4	3	2	4	1	1	1	2	4	34	12·2	
All other Causes ...	18	28	30	16	13	6	16	10	16	15	15	16	199	71·2	
	152	146	161	176	210	165	308	326	231	218	93	89	2,273		
	Admitted per 1,000 of the Average Strength in each Month.														
	55·1	54·5	57·0	63·1	75·1	59·1	108·8	116·0	81·9	78·2	32·8	31·5	813·5		

* Cases of Diphtheria landed at Rangoon from the Troopship "Malabar."

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

VII.

TABLE showing the SICKNESS and MORTALITY among the WOMEN of the EUROPEAN REGIMENTS serving in the BOMBAY PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of the Year per 1,000 of Strength.	Causes of Deaths.														
						Cholera.	Smallpox.	Enteric Fever.	Intermittent Fever.	Remittent and Continued Fever.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.
January ...	1,323	20	15·1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	..	...	...
February ..	1,296	31	23·9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
March ...	1,342	33	24·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
April ...	1,350	43	31·6	4	...	1	1	...	...	...	...	...	1	...	1	...	...	...	...	...
May ...	1,348	51	37·8	10	...	5	...	...	...	1	...	...	1	...	2	...	...	...	...	1
June ...	1,339	59	44·1	7	...	...	...	...	...	...	5	...	...	1	...	...	1	...	...	...
July ...	1,330	56	42·1	4	...	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...
August ...	1,328	59	44·4	3	...	1	...	...	...	...	...	...	1	...	1	...	..	...	...	...
September ...	1,323	68	51·4	7	...	...	..	1	...	1	...	1	1	1	...	...	1	...	...	1
October ...	1,316	53	40·3	3	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...
November ...	1,286	45	35·0	5	...	...	...	...	...	1	...	2	...	...	...	...	...	...	2	...
December ...	1,212	31	25·6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
						9	1	1	...	3	5	3	6	3	5	...	3	...	3	2
						Died per 1,000 of Strength.														
For the year ...	1,317	46	34·9	44	33·41	6·83	·76	3·04			3·79	2·28	4·56	2·28	3·79	...	2·28	...	2·28	1·52

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	1	5	...	2	1	...	...	...	...	9	6·8	100·00
Smallpox ...	...	1	...	2	...	...	...	...	...	...	...	...	3	2·3	33·33
Dengue ...	...	...	9	31	24	38	48	18	7	7	16	6	204	154·9	·49
Enteric Fever ...	...	...	...	...	...	...	...	...	1	...	...	...	1	·8	...
Intermittent Fevers ...	16	14	11	32	15	20	25	33	68	96	40	41	411	312·1	...
Remittent and Continued Fevers ...	10	7	11	11	6	12	12	5	13	18	12	5	122	92·6	2·46
Heat Apoplexy ...	1	...	...	...	...	5	...	...	...	...	...	...	6	4·6	83·33
Dysentery ...	1	...	...	1	5	2	2	6	10	5	3	1	36	27·3	8·33
Diarrhœa .	3	2	3	10	6	7	17	8	3	8	8	7	82	62·2	7·32
Hepatitis ...	...	2	...	1	3	1	2	1	4	1	...	1	16	12·1	18·75
Spleen Disease ...	...	...	1	...	...	...	...	...	...	...	...	1	2	1·5	...
Respiratory Diseases ...	2	4	2	4	3	3	3	3	7	4	4	1	40	30·4	...
Phthisis Pulmonalis ...	1	...	3	2	2	3	2	1	...	...	2	1	17	12·9	29·41
Debility and Anæmia ...	8	8	10	9	19	24	20	15	17	16	12	15	173	131·4	...
Rheumatism ...	3	1	3	2	5	1	7	2	3	4	2	...	33	25·1	...
Eye Diseases ...	2	...	...	1	1	1	1	10	13	2	3	3	37	28·1	...
Childbirth ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abortion .	1	...	2	1	3	4	2	2	2	...	3	1	21	15·9	...
Diseases peculiar to Women ..	2	3	2	4	4	5	5	6	6	3	2	3	45	34·2	1·70
Abscess and Ulcer ...	4	6	3	2	2	5	3	2	1	2	...	...	30	22·8	
Injuries ...	...	2	2	3	...	3	3	2	1	2	2	...	20	15·2	
All other Causes ...	9	12	15	14	21	12	14	16	9	6	8	5	141	107·0	
	63	62	77	131	124	146	168	131	165	174	117	91	1,449		
	Admitted per 1,000 of the Average Strength in each Month.														
	47·6	47·8	57·4	96·4	92·0	109·0	126·3	98·7	124·7	132·2	91·0	75·1	1100·2		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

VIII.

TABLE showing the SICKNESS and MORTALITY among the CHILDREN of the EUROPEAN REGIMENTS serving in the BOMBAY PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths in each Month.	Death-rate of each Month per 1,000 of Strength.	Causes of Deaths.																			
						Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dentition.	Convulsions.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.
January ...	2,245	34	15·1	8	3·56	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1	3	1	...	...
February ...	2,241	40	17·8	7	3·12	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	2	1	...	1
March ...	2,337	56	24·0	22	9·41	...	1	3	...	1	...	...	2	...	1	2	2	1	...	...	2	3	1	...	3
April ...	2,338	66	28·2	22	9·41	2	...	2	...	...	...	...	...	...	1	5	4	...	...	1	4	1	...	...	2
May ...	2,339	78	33·4	20	8·55	5	...	...	...	...	...	...	2	...	...	3	...	2	...	2	2	2	...	...	2
June ...	2,339	86	36·7	8	3·42	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	3	1	...	...	1
July ...	2,353	88	37·4	22	9·35	...	...	...	...	...	...	...	1	...	...	8	...	2	...	1	2	5	1	...	2
August ...	2,376	108	45·5	32	13·47	...	...	...	...	...	...	5	1	...	3	3	...	1	...	1	12	4	1	...	1
September ...	2,373	132	55·6	31	13·06	2	...	...	...	...	...	...	2	...	2	8	2	2	...	1	6	3	2	...	1
October ...	2,359	113	47·9	25	10·60	...	...	...	...	...	1	...	2	...	4	3	1	...	...	...	9	5	...	...	...
November ...	2,228	81	36·4	15	6·73	...	...	...	1	...	...	2	...	...	...	3	...	2	...	1	1	4	...	1	...
December ...	2,106	51	24·2	11	5·22	...	...	...	...	...	...	1	1	...	...	1	1	1	...	...	2	1	1	...	[illegible]
						9	1	6	1	1	1	8	11	...	12	39	11	11	...	9	45	34	8	1	15
						Died per 1,000 of Strength.																			
For the year ...	2,303	78	33·9	223	96·83	3·91	·43	2·61	·43	·43	8·68			...	5·21	16·94	4·78	4·78	...	3·91	19·54	14·76	3·48	·43	6·51

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	2	7	...	...	...	2	...	...	...	11	4·8	81·81
Smallpox ...	...	1	...	2	1	...	...	...	...	...	...	...	4	1·7	25·00
Dengue ...	...	...	19	54	43	62	77	21	15	6	5	6	308	133·7	1·62
Measles ...	19	6	23	6	3	...	...	2	4	...	...	1	64	27·8	9·37
Hooping Cough ...	...	...	...	1	...	...	2	1	...	...	4	...	8	3·4	12·50
Scarlet Fever ...	...	...	1	...	...	...	...	...	...	...	...	1	2	·9	50·00
Enteric Fever ...	...	...	...	...	...	...	...	1	1	...	...	...	2	·9	...
Intermittent Fevers ...	13	16	15	18	23	15	23	55	81	135	65	53	512	222·3	1·56
Remittent and Continued Fevers ...	5	9	23	12	12	15	7	9	14	33	23	9	170	73·8	6·47
Heat Apoplexy ...	...	...	2	...	...	...	...	...	...	...	...	...	2	·9	...
Dysentery ...	4	3	3	7	2	2	6	7	10	6	5	6	60	26·1	15·00
Diarrhœa ...	14	8	19	32	34	20	39	51	42	27	17	8	311	135·0	14·47
Hepatitis ...	...	...	...	...	2	...	1	...	...	...	...	...	3	1·3	...
Spleen Disease ...	...	...	...	...	...	...	...	1	...	1	...	...	2	·9	...
Respiratory Diseases ...	6	5	4	4	3	2	5	5	15	10	6	4	69	30·0	13·04
Eye Diseases ...	9	5	2	15	14	1	15	67	53	9	6	4	200	86·9	...
Anæmia and Debility ...	8	6	11	11	14	23	29	16	17	33	22	15	205	89·0	16·59
Tubercular Diseases ...	...	...	1	1	3	4	3	2	3	3	4	1	25	10·9	44·00
Meningitis and Hydrocephalus ...	1	...	2	4	...	2	...	1	2	1	...	1	14	6·1	78·57
Convulsions ...	1	1	3	6	3	1	10	4	9	4	4	1	47	20·4	82·98
Dentition ...	2	2	6	6	5	6	8	13	10	16	...	2	76	33·0	15·79
Abscess and Ulcer ...	...	2	2	...	2	8	8	2	4	2	1	4	35	15·2	5·92
Injuries ...	5	3	4	...	2	5	5	5	3	6	1	3	42	18·2	
All other Causes ...	5	10	10	10	9	7	10	6	9	5	2	8	91	39·5	
	92	77	149	191	182	173	248	269	294	297	164	127	2,263		
	Admitted per 1,000 of the Average Strength in each Month.														
	41·0	34·4	63·8	81·7	77·8	74·0	105·4	113·2	123·9	125·9	73·6	60·3	982·6		

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

IX.

TABLE showing the DISTRIBUTION by STATIONS of the DEATHS of the WOMEN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of observation.	Causes of Deaths. Cholera.	Smallpox.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.	Total Deaths of the Year.	Died per 1,000 of Strength. A. Cholera.	B. All other Causes.	C. All Causes.
Deolalee Depôt, Bengal Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women on the march ...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	2	...	...	...
Fort William ...	77	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	12·99	12·99
Dum-Dum ...	62	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	2	...	32·26	32·26
Barrackpore ...	51	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	2	...	39·22	39·22
	190	...	...	...	...	1	...	1	1	...	1	...	...	1	...	...	5	...	26·32	26·32
Hazareebaugh ...	92	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	10·87	10·87
Dinapore ...	101	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	9·90	9·90
Benares ...	58	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	17·24	...	17·24
Chunar ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	86	5	...	...	...	1	1	...	...	...	...	...	...	...	1	...	8	58·14	34·88	93·02
Lucknow ...	274	8	...	...	...	...	...	3	...	...	...	...	...	1	1	...	13	29·20	18·25	47·45
Seetapore ...	60	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	2	...	33·33	33·33
Futtehghur (8 months) ...	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore ...	72	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	3	27·78	13·89	41·67
Allahabad ...	130	5	...	...	...	...	...	...	1	1	...	...	...	...	...	...	7	38·46	15·39	53·85
	890	21	...	...	...	1	1	4	2	1	3	...	...	1	2	...	36	23·60	16·85	40·45
Shahjehanpore ...	50	2	...	...	...	...	...	...	1	...	...	...	...	...	...	1	4	40·00	40·00	80·00
Bareilly ...	67	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	2	...	29·85	29·85
Moradabad (10 months) ...	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee ...	47	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	21·28	21·28	42·56
Meerut ...	187	6	...	...	...	1	...	1	1	1	1	...	1	...	2	1	15	32·09	48·12	80·21
Delhi ...	64	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	31·25	31·25
Muttra (10 months) ...	56	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	17·86	17·86
	477	9	...	...	...	1	...	3	3	1	1	...	2	...	3	3	26	18·87	35·64	54·51
Agra ...	123	2	...	...	...	...	1	...	...	...	1	...	...	...	...	...	4	16·26	16·26	32·56
Morar ...	115	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	8·70	8·70
Gwalior Citadel ...	26	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	2	...	76·92	76·92
Jhansi ...	41	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	24·39	24·39
Nowgong ...	23	1	...	...	...	...	...	...	...	...	...	1	...	...	2	...	4	43·48	30·43	173·91
Saugor ...	30	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	33·33	33·33
Jubbulpore ...	53	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	2	...	37·74	37·74
	412	3	...	...	...	1	3	2	...	...	1	1	...	2	2	...	15	7·28	29·13	36·41
Umballa ...	165	1	...	2	...	1	...	...	...	...	...	...	...	...	...	...	4	6·06	18·18	24·24
Phillour (5 months) ...	4	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Jullundur ...	120	2	...	1	...	2	...	...	...	...	2	...	...	...	1	...	8	16·67	50·00	66·67
Ferozepore ...	139	...	...	...	...	...	...	2	1	1	2	...	...	...	...	...	6	...	43·17	43·17
Mooltan ...	109	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	18·35	18·35
Sealkote ...	127	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur ...	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer ...	150	8	...	...	1	1	...	1	1	...	1	...	1	...	1	...	15	53·33	46·67	100·00
Rawulpindee ...	156	1	...	2	...	2	...	...	1	...	2	...	1	...	2	...	11	6·41	64·10	70·51
Campbellpore ...	19	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	52·63	52·63
Attock ...	11	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	90·90	90·90
Nowshera ...	76	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ...	164	6	1	...	...	4	...	1	...	...	2	...	2	...	1	2	19	36·58	79·27	115·85
Cherat (7 months) ...	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,294	18	1	5	1	13	...	4	3	2	9	...	4	...	6	2	68	13·91	38·64	52·55
Darjeeling ...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal ...	32	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	31·25	31·25
Landour ...	15	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	66·67	66·67
Raneekhet ...	38	...	...	...	...	...	...	1	1	...	...	...	...	1	...	2	5	...	131·58	131·58
Chuckrata ...	84	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	3	11·90	23·81	35·71
Kussowlie ...	75	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	13·33	13·33	26·66
Dugshaie (10 months) ...	98	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	5	40·82	10·20	51·02
Subathoo ...	76	2	...	...	...	1	...	...	...	...	1	1	...	...	...	...	5	26·32	39·47	65·79
Jutogh ...	14	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	71·43	71·43
Dhurmsalla ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Hills (6 months) ...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree (7 months) ...	92	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	21·74	...	21·74
	502	10	...	...	...	1	...	2	3	2	1	1	1	2	...	2	25	19·92	29·88	49·80
BENGAL PRESIDENCY ...	3,838	61	1	5	1	18	4	17	12	6	16	2	7	7	13	7	177	15·89	30·23	46·12

STATIONS.	Average Strength for the period of observation.	Causes of Deaths.															Total Deaths of the Year.	Died per 1,000 of Strength.		
		Cholera.	Smallpox.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Phthisis Pulmonalis.	Respiratory Diseases.	Heart Diseases.	Atrophy and Anæmia.	Childbirth and Abortion.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Women on the march, Bombay Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Poona Depôt „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women on the march, Madras Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	3	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad	93	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	3	...	32·26	32·26
Neemuch	31	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	3	...	96·77	96·77
Indore	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow	185	6	...	...	...	1	2	1	1	...	...	...	1	...	...	...	12	32·43	32·43	64·86
Deesa	126	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	15·87	15·87
Ahmedabad and Baroda	28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree	114	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	17·54	17·54
Hyderabad	31	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	32·26	32·26
Aden	71	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	3	...	42·25	42·25
	685	6	1	1	...	1	5	2	4	...	1	...	1	...	2	2	26	8·76	29·20	37·96
Bombay	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur	4	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Ahmednuggur	90	...	...	...	...	1	...	...	1	1	...	...	2	...	...	...	5	...	55·56	55·56
Poona and Kirkee	288	3	...	...	...	...	...	1	1	...	2	...	...	...	1	...	8	10·42	17·36	27·78
Sattara	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum	106	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	3	...	28·30	28·30
Secunderabad	290	...	...	1	...	...	...	1	...	...	...	...	...	1	...	1	4	...	13·80	13·80
Kamptee	166	...	...	...	...	1	1	...	...	...	1	...	...	1	...	1	5	...	30·12	30·12
	456	3	...	1	...	3	1	2	2	3	4	...	2	2	1	2	26	6·58	50·44	57·02
Bellary	92	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	10·87	10·87
Bangalore	261	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2	...	7·66	7·66
Cannanore	85	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	11·76	11·76
Malliapoorum	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly	37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount	75	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	2	...	26·67	26·67
Madras	86	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	656	...	...	...	...	1	1	...	...	...	2	...	...	...	2	...	6	...	9·15	9·15
Rangoon	121	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	8·27	8·27
Toungoo	60	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...	33·33	33·33
Thayetmyo	77	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	13·00	13·00
Port Blair	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	259	...	...	...	...	...	...	1	1	...	2	...	...	...	...	...	4	...	15·44	15·44
Taragbur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	88	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Army of Bengal	3,838	61	1	5	1	18	4	17	12	6	16	2	7	7	13	7	177	15·89	30·23	46·12
Army of Madras	1,495	...	...	1	...	2	2	2	2	...	7	...	...	2	2	2	22	...	14·72	14·72
Army of Bombay	1,317	9	1	1	...	3	5	3	6	3	5	...	3	...	3	2	44	6·83	26·58	33·41
Army of India	6,650	70	2	7	1	23	11	22	20	[illegible]	28	2	10	9	18	11	243	10·53	26·01	36·54

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

X.

TABLE showing the DISTRIBUTION by STATIONS of the DEATHS of the CHILDREN of EUROPEAN REGIMENTS.

Stations.	Average Strength for the period of observation.	Causes of Deaths.																				Total Deaths of the Year.	Died per 1,000 of Strength.		
		Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Enteric Fever.	Intermittent Fever.	Remittent and Continued Fever.	Heat Apoplexy.	Dentition.	Convulsions.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Deolalee Depôt, Bengal Troops...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...
Children on the march ...	...	...	...	...	...	...	...	...	...	...	1	2	...	2	...	1	2	2	2	2	1	15	...	...	...
Fort William ...	107	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	5	1	1	9	...	84·11	84·11
Dum-Dum ...	118	1	...	...	...	...	...	...	...	...	1	4	...	1	...	2	1	2	...	...	...	12	8·48	93·22	101·70
Barrackpore ...	110	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	2	...	1	...	6	...	54·54	54·54
	335	1	...	...	...	...	...	...	2	...	1	4	...	1	...	4	1	5	5	2	1	27	2·99	77·61	80·60
Hazareebaugh ...	149	...	...	...	...	...	...	...	2	...	...	1	4	1	...	...	6	1	1	1	1	18	...	120·81	120·81
Dinapore ...	193	...	...	...	...	...	...	...	...	...	...	4	...	...	1	...	...	1	1	...	2	9	...	46·63	46·63
Benares ...	110	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	4	...	2	...	...	8	...	72·73	72·73
Chunar ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	142	13	1	...	...	...	...	...	3	...	7	...	...	...	...	2	3	...	...	...	3	32	91·55	133·80	225·35
Lucknow ...	477	4	1	...	...	...	...	...	...	...	1	7	4	2	1	4	10	4	1	...	2	41	8·38	77·57	85·95
Seetapore ...	113	...	...	...	...	...	...	...	...	...	2	1	...	...	...	1	1	2	...	1	2	10	...	88·50	88·50
Futtehghur (8 months) ...	38	4	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	7	105·26	78·95	184·21
Cawnpore ...	103	1	...	...	...	...	...	...	1	...	...	6	...	1	...	...	4	2	...	...	...	15	9·71	135·92	145·63
Allahabad ...	260	8	...	...	...	...	...	1	2	...	5	8	...	1	...	...	3	1	...	1	...	30	30·77	74·61	115·38
	1,677	30	2	...	...	...	...	1	9	...	18	27	9	5	2	7	31	11	5	3	10	170	19·02	88·78	107·80
Shahjehanpore ...	73	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...	...	...	5	27·40	41·10	68·50
Bareilly ...	114	...	...	2	...	...	...	...	...	...	...	2	...	1	...	...	1	2	...	...	...	8	...	70·18	70·18
Moradabad (10 months) ...	25	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	40·00	40·00
Roorkee ...	62	...	...	...	...	...	...	...	1	...	2	2	...	1	...	1	2	1	2	...	2	14	...	225·81	225·81
Meerut ...	351	10	...	...	1	...	1	...	7	...	8	8	...	3	...	1	14	3	1	1	1	59	28·49	139·60	168·09
Delhi ...	116	...	...	...	...	...	...	...	2	...	...	1	...	1	...	1	3	...	...	...	...	8	...	68·97	68·97
Muttra (10 months) ...	110	...	...	...	...	...	...	...	...	...	4	1	...	1	...	...	...	...	...	...	...	6	...	54·55	54·55
	829	12	...	2	1	...	1	...	11	...	14	15	...	7	...	3	21	7	3	1	3	101	14·48	107·35	121·83
Agra ...	162	3	...	...	...	...	...	...	...	...	3	...	1	...	...	1	5	1	2	...	...	16	18·52	80·24	98·76
Morar ...	218	...	...	...	...	...	...	...	...	...	4	...	1	1	...	1	3	2	...	...	6	18	...	82·57	82·57
Gwalior Citadel ...	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi ...	77	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2	1	...	...	5	...	64·94	64·94
Nowgong ...	39	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2	...	51·28	51·28
Saugor ...	57	...	...	...	...	...	...	1	...	...	...	1	1	...	...	...	1	...	...	...	...	4	...	70·18	70·18
Jubbulpore ...	100	...	...	...	...	...	...	...	...	...	3	2	...	...	...	...	4	...	...	...	...	9	...	90·00	90·00
	698	3	...	...	...	...	...	1	...	...	12	5	3	1	...	2	13	5	3	...	6	54	4·30	73·06	77·36
Umballa ...	213	...	...	...	...	...	...	...	3	1	1	4	...	1	...	...	11	5	4	...	...	30	...	140·85	140·85
Phillour (3 months) ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ...	158	4	...	...	...	...	...	...	1	...	3	6	1	3	...	1	9	8	1	...	...	37	25·32	208·86	234·18
Ferozepore ...	226	...	...	2	...	...	...	...	...	...	...	1	1	...	...	...	13	1	...	1	...	19	...	84·07	84·07
Mooltan ...	185	...	...	4	...	...	...	...	3	...	...	2	...	...	...	...	4	3	1	1	1	19	...	102·70	102·70
Sealkote ...	276	...	...	2	...	...	...	...	3	...	4	2	...	2	...	...	...	1	1	...	...	15	...	54·35	54·35
Umritsur ...	27	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	...	...	...	3	...	111·11	111·11
Fort Lahore	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Meean Meer ...	233	27	...	...	...	...	...	...	...	...	2	11	...	3	...	...	8	8	3	2	1	65	115·88	163·12	279·00
Rawulpindee	224	...	...	...	...	...	...	...	5	...	2	2	...	3	...	...	8	3	2	1	...	26	...	116·07	116·07
Campbellpore ...	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock ...	18	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	3	...	166·67	166·67
Nowshera ...	112	...	1	...	...	2	...	...	1	...	...	...	...	...	...	1	3	2	1	...	...	11	...	98·21	98·21
Peshawur	265	12	...	...	...	...	...	...	12	1	1	6	2	...	...	1	2	9	1	1	1	49	45·28	139·63	184·91
Cherat (7 months) ...	115	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	1	4	...	...	...	7	...	60·87	60·87
	2,041	43	1	8	...	2	...	...	29	2	14	37	4	13	...	3	60	45	14	7	3	285	21·07	118·57	139·64
Darjeeling	35	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	28·57	28·57
Nynee Tal ...	63	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	5	...	...	1	8	...	127·00	127·00
Landour ...	41	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	5	...	121·95	121·95
Raneekhet ...	74	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	...	...	4	...	54·05	54·05
Chuckrata ...	155	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	3	...	3	...	...	9	...	58·06	58·06
Kussowlie ...	145	12	...	...	...	...	...	...	...	...	...	1	1	...	...	...	2	2	2	...	1	21	82·76	62·07	144·83
Dugshaie (10 months)	176	4	...	...	...	...	...	...	...	...	1	1	1	...	...	...	1	1	...	...	...	9	22·73	28·41	51·14
Subathoo (10 months) ...	149	1	...	...	1	...	...	...	...	...	2	1	...	...	...	6	1	1	1	2	...	16	6·71	100·67	107·38
Jutogh ..	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie ...	3	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Murree Hills (6 months) ..	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree (7 months) ..	196	3	...	...	...	2	...	...	...	...	2	...	...	...	...	...	4	...	...	...	3	14	15·31	56·12	71·43
	944	20	...	3	1	2	...	...	1	...	6	5	3	1	...	6	15	11	7	2	5	88	21·19	72·03	93·22
BENGAL PRESIDENCY ..	6,560	109	3	13	2	4	1	2	52	2	66	95	19	30	2	26	143	86	39	17	30	741	16·61	96·34	112·95

STATIONS.	Average Strength for the period of observation.	Causes of Deaths.																				Total Deaths of the Year.	Died per 1,000 of Strength.		
		Cholera.	Smallpox.	Measles.	Hooping Cough.	Scarlet Fever.	Enteric Fever.	Intermittent Fevers.	Remittent and Continued Fevers.	Heat Apoplexy.	Dentition.	Convulsions.	Meningitis and Hydrocephalus.	Tabes Mesenterica.	Phthisis Pulmonalis.	Dysentery.	Diarrhœa.	Anæmia and Atrophy.	Bronchitis and Pneumonia.	Croup and Diphtheria.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Children on the march, Bombay Presidency ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	3	...	...	...
Poona Depôt „	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Colaba Depôt „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...
Children on the march, Madras Presidency ...	...	...	...	3	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	...	6	...	...	...
Poonamallee and Presidency Depôts ...	79	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	8	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
Poona and Bombay Depôts „	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Nusseerabad ...	169	...	...	2	...	...	1	2	...	...	...	4	...	...	...	...	15	3	1	...	1	29	...	171·60	171·60
Neemuch ...	55	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3	...	1	...	...	7	36·36	90·91	127·27
Indore ...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow ...	356	7	...	...	...	...	...	4	5	...	4	7	...	2	...	1	2	8	...	...	...	40	19·66	92·70	112·36
Deesa ...	275	...	...	...	1	...	...	1	1	...	...	7	...	...	...	1	8	4	...	1	1	25	...	90·91	90·91
Ahmedabad and Baroda ...	63	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	2	...	31·75	31·75
Kurrachee and Ghizree ...	172	...	...	...	...	...	...	...	1	...	1	2	...	1	...	2	4	2	1	...	1	15	...	87·21	87·21
Hyderabad ...	47	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	3	...	63·83	63·83
Aden ...	122	...	...	...	...	...	...	...	1	...	2	2	2	1	...	2	2	2	...	...	2	16	...	131·15	131·15
	1,267	9	...	2	1	...	1	7	9	...	9	23	3	5	...	6	34	19	3	1	5	137	7·10	101·03	108·13
Bombay ...	90	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	11·11	11·11
Asseerghur ...	6	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Ahmednuggur ...	148	...	...	3	...	...	...	1	...	...	1	...	...	...	...	...	...	1	1	...	3	10	...	67·57	67·57
Poona and Kirkee ...	433	...	1	1	...	1	...	...	1	...	1	13	5	6	...	1	5	9	3	...	6	53	...	122·40	122·40
Sattara ...	19	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	105·26	105·26
Belgaum ...	207	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2	3	1	...	...	1	9	...	43·48	43·48
Secunderabad ...	541	...	...	...	...	...	2	...	2	...	4	18	2	2	1	3	12	4	1	...	1	52	...	96·12	96·12
Kamptee ...	255	...	1	...	...	1	...	...	8	1	...	3	...	2	...	2	6	5	1	...	2	32	...	125·49	125·49
	1,699	...	2	4	...	2	2	1	11	1	7	37	8	10	1	8	27	20	6	...	13	160	...	94·17	94·17
Bellary ...	144	...	...	...	...	...	...	...	...	...	2	3	...	...	...	1	3	...	2	1	...	12	...	83·33	83·33
Bangalore ...	491	...	1	...	...	...	1	...	...	...	2	3	3	...	...	...	2	4	4	...	4	24	...	48·88	48·88
Cannanore ...	142	...	...	...	...	...	...	...	...	...	...	3	1	1	...	...	1	...	1	...	1	8	...	56·34	56·34
Malliapoorum ...	16	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	62·50	62·50
Calicut ...	18	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	2	...	111·11	111·11
Trichinopoly ...	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	13·33	13·33
St. Thomas' Mount ...	161	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	...	3	...	18·63	18·63
Madras ...	184	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	3	...	...	1	7	...	38·04	38·04
	1,231	...	1	...	...	...	1	...	1	...	6	11	5	1	...	3	6	8	8	1	6	58	...	47·12	47·12
Rangoon ...	248	...	...	...	...	...	...	...	...	...	1	3	...	...	...	...	6	...	...	6*	1	17	...	68·55	68·55
Toungoo ...	100	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	1	1	...	5	...	50·00	50·00
Thayetmyo ...	143	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	2	...	1	1	7	...	48·95	48·95
Port Blair ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	493	...	...	...	...	...	...	...	...	...	3	3	1	...	...	1	8	2	1	8	2	29	...	58·82	58·82
Taraghur (Ajmere) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo ...	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	2	...	50·00	50·00
Poorundhur ...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	122	...	...	[illegible]	...	...	...	...	2	...	...	...	...	...	...	...	1	1	1	...	...	7	...	57·38	57·38
	190	...	...	2	...	...	...	...	2	...	...	...	...	...	...	...	2	2	1	...	...	9	...	47·37	47·37
Army of Bengal ...	6,560	109	3	13	2	4	1	2	52	2	66	95	19	30	2	26	143	86	39	17	30	741	16·61	96·34	112·95
Army of Madras ...	2,794	...	2	8	...	1	3	...	13	1	14	37	8	5	1	9	34	21	13	9	12	191	...	68·36	68·36
Army of Bombay ...	2,303	9	1	6	1	1	1	8	11	...	12	39	11	11	...	9	45	34	8	1	15	223	3·91	92·92	96·83
Army of India ...	11,657	118	6	27	3	6	5	10	76	3	92	171	38	46	3	44	222	141	60	27	57	1,155	10·12	88·96	99·08

* Of these, four were cases of Diphtheria landed from the Overland Troopship "Malabar."

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

XI.

TABLE showing the DISTRIBUTION by STATIONS of the CHOLERA of the WOMEN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of observation.	Number of Admissions from Cholera in each Month.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Deolalee Depôt, Bengal Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women on the march ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William ...	77	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum ...	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barrackpore ...	51	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	190	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hazareebaugh ...	92	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore ...	101	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares ...	58	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...
Chunar ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	86	...	...	...	...	...	...	...	2	5	...	...	...	7	5	...
Lucknow ...	274	...	...	...	...	...	...	2	5	5	...	...	...	12	8	...
Seetapore ...	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futteghur (8 months) ...	19	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...
Cawnpore ...	72	...	...	...	...	5	...	...	...	...	...	...	...	5	2	...
Allahabad ...	130	...	...	1	1	1	...	...	4	...	...	...	...	7	5	...
	890	...	...	1	1	6	...	3	12	10	...	...	...	33	21	23·6
Shahjehanpore ...	50	...	...	...	...	...	...	...	2	1	...	...	...	3	2	...
Bareilly ...	67	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad (10 months) ...	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee ...	47	...	...	...	...	...	...	...	...	2	...	...	...	2	1	...
Meerut ...	187	...	...	...	...	...	...	...	2	5	...	...	...	7	6	...
Delhi ...	64	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra (10 months) ...	56	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	477	...	...	...	...	...	...	...	4	8	...	...	...	12	9	18·87
Agra ...	128	...	...	...	...	1	...	...	...	1	...	...	...	2	2	...
Morar ...	115	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel ...	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi ...	41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong ...	23	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...
Saugor ...	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore ...	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	412	...	...	...	...	1	...	...	...	2	...	...	...	3	3	7·28
Umballa ...	165	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...
Phillour (5 months) ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ...	120	...	...	...	...	...	...	...	1	2	...	...	...	3	2	...
Ferozepore ...	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan ...	109	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote ...	127	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur ...	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer ...	160	...	...	...	...	...	...	...	14	...	...	...	...	14	8	...
Rawulpindee ...	166	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...
Campbellpore ...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock ...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera ...	76	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ...	164	...	...	...	...	...	...	...	...	...	7	1	...	8	6	...
Cherat (7 months) ...	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1,294	...	...	...	...	...	...	...	15	4	7	1	...	27	18	13·91
Darjeeling ...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal ...	82	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour ...	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneekhet ...	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata ...	84	...	...	...	...	...	...	...	...	2	...	...	...	2	1	...
Kussowlie ...	75	...	...	...	...	...	...	3	...	...	...	...	...	3	1	...
Dugshaie (10 months) ...	98	...	...	...	...	...	...	...	6	...	...	...	...	6	4	...
Subathoo (10 months) ...	85	...	...	...	...	...	...	2	...	...	...	...	...	2	2	...
Jutogh ...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Depôt (7 months) ...	92	...	...	...	...	...	...	...	1	1	...	...	...	2	2	...
Murree Hills (6 months) ...	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	502	...	...	...	...	...	...	5	7	3	...	...	...	15	10	19·9
BENGAL PRESIDENCY ...	3,838	...	...	1	1	7	...	8	38	27	7	1	...	90	61	15·8

STATIONS.	Average Strength for the period of observation.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Déc.			
Women on the march, Bombay Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona Depôt „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Women on the march, Madras Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôts	37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Madras Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad	93	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neemuch	81	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Indore	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow	185	...	...	...	1	5	...	...	...	...	...	...	...	6	6	...
Deesa	126	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda	28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree	114	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	685	...	...	...	1	5	...	...	...	...	...	...	...	6	6	8·76
Bombay	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur	90	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Kirkee	288	...	...	...	...	...	...	2	1	...	...	...	...	3	3	...
Sattara	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum	106	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad	290	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Kamptee	168	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	456	...	...	1	...	...	...	2	1	...	...	...	...	4	3	6·58
Bellary	92	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore	261	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cannanore	85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malliapoorum	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly	37	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras	86	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	656	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rangoon	121	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungoo	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo	77	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	259	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	8[illegible]	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Army of Bengal	3,838	...	...	1	1	7	...	8	38	27	7	1	...	90	61	15·89
Army of Madras	1,495	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
Army of Bombay	1,317	...	...	...	1	5	...	2	1	...	...	...	...	9	9	6·83
Army of India	6,650	...	...	2	2	12	...	10	39	27	7	1	...	100	70	10·53

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

XII.

TABLE showing the DISTRIBUTION by STATIONS of the CHOLERA of the CHILDREN of EUROPEAN REGIMENTS.

STATIONS.	Average Strength for the period of observation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Deolalee Depôt, Bengal Troops	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Children on the march	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	107	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dum-Dum	118	...	...	...	...	...	...	...	...	...	...	1	...	1	1	...
Barrackpore	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	335	...	...	...	...	...	...	...	...	...	...	1	...	1	1	2·99
Hazareebaugh	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dinapore	193	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chunar	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad	142	...	...	...	...	...	...	...	6	12	...	...	...	18	13	...
Lucknow	477	...	...	...	...	1	...	1	2	5	...	...	...	9	4	...
Seetapore	113	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur	38	...	...	...	...	...	...	...	2	2	...	...	...	4	4	...
Cawnpore	103	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...
Allahabad	260	...	...	...	...	...	...	...	8	...	...	...	...	8	8	...
	1,577	...	...	...	...	2	...	1	18	19	...	...	...	40	30	19·02
Shahjehanpore	73	...	...	...	...	...	...	...	2	...	...	...	...	2	2	...
Bareilly	114	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut	351	...	...	...	...	...	...	...	4	6	...	...	...	10	10	...
Delhi	116	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	829	...	...	...	...	...	...	...	6	6	...	...	...	12	12	14·48
Agra	162	...	...	...	...	4	...	...	...	...	...	...	...	4	3	...
Morar	218	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gwalior Citadel	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	77	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	39	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	57	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jubbulpore	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	698	...	...	...	...	4	...	...	...	...	...	...	...	4	3	4·30
Umballa	213	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phillour	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	158	...	...	...	...	...	...	...	1	1	2	...	...	4	4	...
Ferozepore	226	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	185	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	276	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort Lahore	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	233	...	...	...	...	...	...	...	36	...	...	...	...	36	27	...
Rawulpindee	224	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Campbellpore	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	112	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur	265	...	...	...	...	...	...	...	...	...	16	1	...	17	12	...
Cherat	215	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2,041	...	...	...	...	...	...	...	37	1	18	1	...	57	43	21·07
Darjeeling	35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nynee Tal	63	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Landour	41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ranee khet	74	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chuckrata	155	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kussowlie	145	...	...	...	...	...	...	11	6	1	...	...	...	18	12	...
Dugshaie	176	...	...	...	...	...	...	...	5	...	...	...	...	5	4	...
Subathoo	149	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...
Jutogh	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kangra	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dalhousie	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree Depôt	196	...	...	...	...	...	...	...	1	4	...	...	...	5	3	...
Murree Hills	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	944	...	...	...	...	...	...	12	12	5	...	...	...	29	20	21·19
BENGAL PRESIDENCY	6,560	...	...	...	...	6	...	13	73	31	18	2	...	143	109	16·61

STATIONS.	Average Strength for the period of observation.	Number of Admissions from Cholera in each Month.												Total Admissions of the Year.	Deaths of the Year.	Death-rate per 1,000 of Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Children on the march, Bombay Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Bombay Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona Depôt " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colaba Depôt " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Children on the march, Madras Presidency	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poonamallee and Presidency Depôt ...	79	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolalee Depôt, Madras Troops ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Bombay Depôts " ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nusseerabad ...	169	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neemuch ...	55	...	...	...	...	...	...	...	...	2	...	...	...	2	2	...
Indore ...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mhow ...	356	...	...	...	2	7	...	...	...	...	...	...	...	9	7	...
Deesa ...	275	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmedabad and Baroda ...	63	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurrachee and Ghizree ...	172	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad ...	47	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aden ...	122	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1267	...	...	...	2	7	...	...	...	2	...	...	...	11	9	7·10
Bombay ...	90	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asseerghur ...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ahmednuggur ...	148	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poona and Kirkee ...	433	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sattara ...	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belgaum ...	207	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Secunderabad ...	541	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kamptee ...	255	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1699	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bellary ...	144	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bangalore ...	491	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cannanore ...	142	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malliapoorum ...	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calicut ...	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trichinopoly ...	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Thomas' Mount ...	161	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Madras ...	184	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	1231	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rangoon ...	248	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toungoo ...	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thayetmyo ...	143	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Blair ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	493	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mount Aboo ...	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poorundhur ...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ramandroog ...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wellington ...	122	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	190	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Army of Bengal ...	6,560	...	...	...	...	6	...	13	73	31	18	2	...	143	109	16·61
Army of Madras ...	2,974	...	...	...	...	...	...	...	...	...	...	...	...	None	...	...
Army of Bombay ...	2,303	...	...	...	2	7	...	...	...	2	...	...	...	11	9	3·91
Army of India ...	11,657	...	...	...	2	13	...	13	73	33	18	2	...	154	118	10·12

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

XIII.

DETAIL of the CAUSES of the ADMISSIONS and DEATHS of the WOMEN of EUROPEAN REGIMENTS.

Women of the Army of Bengal—Strength	... 3,838	Admission-rate per 1,000	...	... 1246·4	Death-rate per 1,000		... 46·12
" " Madras	" ... 1,495	"	"	... 1011·4	"	"	... 14·72
" " Bombay	" ... 1,317	"	"	... 1100·2	"	"	... 33·41
" " India	" ... 6,650	"	"	... 1164·1	"	"	... 36·54

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL.		MADRAS.		BOMBAY.		ARMY OF INDIA.			
									RATIO PER 1,000 OF STRENGTH.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Dengue ...	353	...	94	...	204	1	651	1	97·9	...
Cholera ...	90	61	1	...	9	9	100	70	15·0	10·53
Smallpox ...	4	1	6	...	3	1	13	2	2·0	·30
Chickenpox ...	1	...	1	...	1	...	3	...	...	...
Measles ...	2	...	1	...	7	...	10	...	...	...
Scarlatina ...	...	...	1	...	...	...	1	...	...	...
Mumps ...	...	...	2	...	1	...	3	...	...	...
Erysipelas ...	1	...	4	...	2	...	7	...	...	...
Enteric Fever ...	6	5	2	1	1	1	9	7	1·4	
Intermittent Fevers ...	745	1	126	...	411	...	1,282	1	192·8	4·66
Remittent and Continued Fevers ...	647	18	124	2	122	3	893	23	134·3	
Rheumatism ...	70	...	27	1	23	...	120	1	25·3	...
Secondary Syphilis ...	2	...	3	...	5	...	10	...	...	...
Scrofula ...	1	...	1	...	...	...	2	...	...	...
Morbus Coxæ ...	1	...	...	...	...	...	1	...	...	...
Phthisis Pulmonalis ...	45	16	16	7	17	5	78	28	11·7	4·21
Cancer ...	2	...	...	...	...	...	2	...	...	...
Anæmia ...	201	...	23	...	13	...	237	...	...	...
Anasarca ...	1	...	...	...	1	...	2	...	...	...
Apoplexy ...	11	4	2	2	6	5	19	11	2·9	1·65
Meningitis ...	1	...	...	...	...	...	1	...	...	...
Encephalitis ...	1	...	...	...	...	...	1	...	...	...
Paralysis ...	6	...	...	...	...	...	6	...	...	...
Epilepsy ...	9	2*	3	...	1	...	13	2	...	...
Chorea ...	...	...	...	...	...	...	...	...	...	...
Delirium Tremens ...	1	...	...	...	...	...	1	...	...	...
Neuralgia ...	35	...	3	...	10	...	48	...	...	...
Mania and Melancholia ...	4	...	...	...	...	...	4	...	...	...
Hysteria ...	21	...	7	...	5	...	33	...	5·0	...
Ophthalmia ...	296	...	104	...	37	...	437	...	65·7	...
Otitis ...	9	...	...	...	...	...	9	...	...	...
Varix ...	1	...	2	...	...	...	3	...	...	...
Palpitation ...	7	...	...	...	...	...	7	...	...	...
Angina Pectoris ...	...	...	2	...	...	...	2	...	...	...
Heart Disease ...	10	6	...	...	4	3	14	9	...	1·51
Aortic Aneurism ...	1	1	...	...	...	...	1	1		
Pericarditis ...	...	...	...	...	1	...	1	...	...	...
Influenza ...	2	...	5	...	...	...	7	...		
Tonsillitis ...	30	..	8	...	10	...	48	...		
Bronchitis ...	86	2	28	...	26	...	140	2	33·4	·30
Asthma ...	9	...	2	...	3	...	14	...		
Pleurisy ...	6	...	...	...	...	...	6	...		
Pneumonia ...	4	...	...	...	...	...	4	...		
Stomatitis ...	3	...	...	...	1	...	4	...	...	...
Gastritis ...	...	...	1	...	4	...	5	...	...	...
Enteritis ..	2	...	...	...	...	...	2	...	...	...
Peritonitis ...	3	...	...	...	...	...	3	...	...	...
Dyspepsia ...	193	...	181	...	84	...	458	...	...	...
Constipation ...	8	...	5	...	4	...	17	...	...	...
Hernia ...	1	...	...	...	...	...	1	...	...	...
Colic ...	44	...	18	...	4	...	66	...	...	...
Hæmorrhoids ...	8	...	6	...	3	...	17	...	...	...
Tapeworm ...	10	...	2	...	2	...	14	...	...	...
Jaundice ...	11	1	3	...	2	...	16	1	...	...
Hæmatemesis ...	1	...	...	...	1	...	2	...	...	...
Melæna ...	...	...	...	...	1	...	1	...	...	...
Hepatitis ...	93	6	33	...	16	3	142	9	21·4	1·35
Spleen Disease ...	12	...	...	...	2	...	14	...	2·1	...
Dysentery ...	184	17	59	2	36	3	279	22	41·9	3·31
Diarrhœa ...	343	12	96	2	82	6	521	20	78·3	3·01
Nephritis ...	8	2	...	...	1	1	9	3	...	...
Cystitis ...	2	...	1	...	...	...	3	...	...	...
Calculus ...	1	...	...	...	...	...	1	...	...	...
Ischuria ...	2	...	...	...	...	...	2	...	...	...
Hæmaturia ...	2	...	...	...	...	...	2	...	...	..
Enuresis ...	2	...	...	...	...	...	2	...	...	...
Diuresis ...	3	...	...	...	...	...	3	...	...	...
Amenorrhœa ...	4	...	...	...	5	...	9	...		
Dysmenorrhœa ...	12	...	1	...	5	...	18	...		
Menorrhagia ...	39	...	10	...	11	...	60	...		
Ovaritis ...	1	...	...	...	3	...	4	...		
Ovarian Tumour ...	3	...	3	...	...	...	6	...		
Cancer of Uterus ...	1	1	...	...	...	...	1	1		
Ulcer of Uterus ..	2	...	1	...	2	...	5	...		
Prolapsus Uteri ...	6	...	7	...	3	...	16	...		
Leucorrhœa ...	14	...	1	...	4	...	19	...	27·8	
Pelvic Cellulitis ...	1	1	1	1	...	...	2	2		3·16
Metritis ...	2	...	1	...	3	1	6	1		
Puerperal Fever ...	4	3	...	...	...	...	4	3		
Puerperal Peritonitis ...	3	3	...	...	1	1	4	4		
Retained Placenta ...	1	...	...	...	...	...	1	...		
Phlegmasia dolens ...	3	1	...	...	...	...	3	1		
Puerperal Convulsions ...	2	...	...	...	...	...	2	...		
Uterine Hæmorrhage ...	14	...	8	1	4	1	26	2		
Debility and Shock following labour ...	...	2	...	...	...	...	...	2		
Abortion ...	94	4	24	1	21	...	139	5	30·9	
Periostitis ...	1	...	...	...	...	...	1	...	...	...
Synovitis ...	5	...	1	...	5	...	11	...	...	...
Necrosis ...	...	...	...	...	1	...	1	...	...	...
Abscess ...	63	...	22	...	16	...	101	...		...
Ulcer ...	35	...	14	...	14	...	63	...	26·0	...
Boils ...	4	...	5	...	...	...	9	...		...
Scabies and Skin Diseases ...	7	...	7	...	5	...	19	...	...	...
Tumour ...	2	...	1	...	...	...	3	...	...	...
General Debility ...	755	7	389	2	160	...	1,304	9	231·7†	1·35†
Injuries ...	43	...	12	...	20	...	75	...	11·3	...
Cause not ascertained ...	1	...	1	...	...	...	2	...	...	...
Ratio for all causes not specially calculated ...	...	...	...	...	...	...	...	...	115·3	1·20
	4,780	177	1,512	22	1,449	44	7,741	243	1164·1	36·54

* Convulsions occurring during fever. † With Anæmia.

WOMEN AND CHILDREN OF EUROPEAN REGIMENTS, 1872.

XIV.

DETAIL of the CAUSES of the ADMISSIONS and DEATHS of the CHILDREN of EUROPEAN REGIMENTS.

Children of the Army of Bengal—Strength ... 6,560 Admission-rate per 1,000 ... 990·1 Death-rate per 1,000 ... 112·95
" " Madras " ... 2,794 " " ... 813·5 " " ... 68·36
" " Bombay " ... 2,308 " " ... 982·6 " " ... 96·83
" " India " ... 11,657 " " ... 946·4 " " ... 99·08

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL.		MADRAS.		BOMBAY.		ARMY OF INDIA.			
									RATIO PER 1,000 OF STRENGTH.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Dengue	430	...	140	3	308	5	878	8	75·3	...
Cholera	143	109	...	...	11	9	154	118	13·2	10·12
Smallpox	8	3	9	2	4	1	21	6	1·8	·51
Chickenpox	33	...	37	...	9	...	79	...	...	...
Measles	205	13	103	8	64	6	372	27	31·9	2·32
Hooping Cough	33	2	10	...	8	1	51	3	4·4	...
Mumps	7	...	31	...	4	...	42	...	...	...
Scarlatina	18	4	8	1	2	1	28	6	2·0	·51
Diphtheria	3	3	11*	4	...	...	14	7	...	·60
Erysipelas	8	1	3	...	5	2	16	3	...	·26
Enteric Fever	8	1	6	3	2	1	16	5	1·3	7·81
Intermittent Fever	764	2	102	...	512	8	1,378	10	118·2	
Remittent and Continued Fever	833	52	212	13	170	11	1,215	76	104·2	
Rheumatism	5	...	1	...	2	...	8	...	...	...
Secondary Syphilis	4	1	2	...	3	1	9	2	...	...
Scrofula	6	1	9	...	10	...	25	1	9·9	4·20
Tabes Mesenterica	50	30	12	5	15	11	77	46		
Phthisis Pulmonalis	4	2	2	1	...	...	6	3		
Hip-joint Disease	6	...	1	...	...	...	7	...		
Anæmia	194	13	4	...	25	8	223	21	...	...
Cancrum oris	4	3	...	...	...	...	4	3	...	...
Anasarca and Ascites	9	2	...	...	4	1	13	3	...	...
Scurvy	3	2	...	...	...	...	3	2	...	...
Sunstroke	8	2	1	1	2	...	11	3	·9	·26
Chorea	1	...	...	...	2	...	3	...	...	...
Hysteria	4	...	2	...	...	...	6	...	..	...
Epilepsy	5	1	2	...	2	...	9	1	...	...
Trismus	1	1	...	...	1	...	2	1	...	...
Neuralgia	1	...	1	...	...	...	2	...	...	...
Infantile Paralysis	...	...	1	...	1	...	2	...	...	...
Hemiplegia	1	...	...	...	...	...	1	...	...	...
Meningitis	19	12	10	8	8	7	37	27	4·9	3·26
Hydrocephalus	14	7	...	...	6	4	20	11		
Convulsions	120	95	58	37	47	39	225	171	19·3	14·67
Ophthalmia	904	...	458	...	200	...	1,562	...	134·0	...
Otitis	6	...	7	...	2	...	15	...	...	...
Heart Disease	2	1	...	...	1	1	3	2	...	...
Epistaxis	1	...	...	...	1	...	2	...	...	...
Influenza	6	...	3	...	1	...	10	...	49·2	6·87
Tonsillitis	37	1	10	1	9	...	56	2		
Œdema Glottidis	1	1	1	1	...	...	2	2		
Croup	31	12	6	3	5	1	42	16		
Bronchitis	207	27	168	12	50	4	425	43		
Pneumonia	15	12	5	1	4	4	24	17		
Stomatitis and Aphtha	18	3	3	1	3	1	24	5	...	...
Enteritis	1	1	4	3	2	1	7	5	...	...
Peritonitis	1	...	...	...	3	1	4	1	...	...
Dyspepsia	9	...	19	...	7	...	35	...	...	...
Constipation	6	...	2	...	2	...	10	...	...	...
Colic	6	...	5	...	1	...	12	...	...	...
Hæmorrhoids and Prolapsus ani	6	...	7	..	...	...	13	...	...	...
Hernia	2	...	6	...	...	...	8	...	...	...
Tapeworm	19	...	3	...	8	...	30	...	...	...
Ascaris	6	...	16	...	4	...	26	...	...	...
Jaundice	7	...	1	...	4	...	12	...	...	...
Hepatitis	10	1	2	2	3	...	15	3	1·3	...
Spleen Disease	12	...	...	...	2	...	14	...	1·2	...
Dysentery	182	26	80	9	60	9	322	44	27·6	3·77
Diarrhœa	966	143	207	34	311	45	1,484	222	127·3	19·04
Nephritis	2	1	...	...	...	...	2	1	...	...
Cystitis	1	...	1	...	...	...	2	...	...	...
Calculus	...	...	1	...	...	...	1	...	...	...
Lithotomy	1	...	...	...	...	...	1	...	...	...
Gonorrhœa	1	...	...	...	...	...	1	...	...	...
Phimosis	2	...	...	...	...	...	2	...	...	...
Orchitis	3	...	1	...	1	...	5	..	...	...
Hydrocele	...	...	2	...	...	...	2	...	...	...
Vaginitis	1	...	...	...	...	...	1	...	...	...
Leucorrhœa	2	...	...	...	1	...	3	...	...	...
Amenorrhœa	1	...	2	...	...	...	3	...	...	...
Curvature of Spine	1	...	1	...	...	...	2	...	...	...
Spina Bifida	1	2	...	...	...	...	1	2	...	...
Harelip	1	...	...	...	1	...	2	...	...	...
Imperforate Anus	...	...	1	1	...	...	1	1	...	...
Cyanosis	1	1	..	...	...	...	1	1	...	...
Umbilical Hæmorrhage	1	1	...	...	...	...	1	1	...	...
Dentition	256	66	69	14	76	12	401	92	34·4	7·89
Periostitis	1	...	...	...	...	...	1	...	...	...
Synovitis	3	...	1	...	2	...	6	...	...	...
Caries	1	...	1	...	1	...	3	...	...	...
Contraction	2	...	...	...	...	...	2	...	...	...
Strabismus	1	...	...	..	...	...	1	..	...	...
Abscess	30	1	19	1	12	...	61	2	14·4	...
Ulcer	22	...	14	...	8	...	44	..		
Boils	26	...	22	...	15	...	63	..		
Tumour	1	...	...	...	...	...	1	...	...	...
Scabies and Skin Diseases	37	..	35	...	13	...	85	..	...	...
Guinea Worm	...	...	...	...	1	...	1	...	...	...
General Debility	658	73	218	21	180	26	1,056	120	109·7†	12·10†
Injuries	88	6	34	1	42	2	164	9	14·1	...
Cause not specified	3	...	...	...	...	...	3	...	...	...
Ratio for all causes not specially calculated	...	...	...	...	...	...	...	...	45·9	4·89
	6,496	741	2,273	191	2,263	223	11,032	1,155	946·4	99·08

* Landed at Rangoon from Troopship "Malabar." † With Anæmia.

2. NATIVE TROOPS, 1872.

The Regimental Strength upon which the actual Death-rate for the year is calculated is 44,516. The Total Deaths, absent and present, amount to 894, and this number, with a strength of 44,516, represents a loss of 20·08 per 1,000. The Deaths of men present with their regiments amounted to 647, giving a ratio of 16·51 in relation to a Strength of 39,179, the average present during the year.

NATIVE TROOPS, 1872.

I.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the BENGAL PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

(This Statement is for the Regular Native Army only, and for men present from month to month with their Regiments.—See introductory note.)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number of Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																			
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	43,160	1,936	44·9	89	2·06	4	...	...	8	7	...	...	9	6	...	2	31	...	4	1	1	2	3	5	6
February ...	43,080	1,786	41·5	42	·98	1	...	...	2	2	...	...	7	2	...	...	15	...	5	...	1	2	...	1	4
March ...	42,803	1,770	41·4	125	2·92	85	...	...	4	5	...	...	5	2	2	...	11	...	2	...	2	2	2	3	...
April ...	38,504	1,539	40·0	47	1·22	7	...	...	1	2	...	1	2	5	1	1	12	1	5	...	1	2	...	4	2
May ...	36,296	1,292	35·6	39	1·08	10	1	...	2	2	1	...	...	1	...	1	4	1	5	...	...	2	...	4	5
June ...	36,405	1,239	34·0	32	·88	5	1	1	1	2	1	1	1	2	...	...	6	...	3	...	...	...	1	3	4
July ...	36,703	1,252	34·1	32	·87	4	1	...	1	5	...	...	2	1	1	2	5	...	3	...	...	...	1	...	6
August ...	36,658	1,581	43·1	44	1·20	26	...	1	4	2	...	...	1	1	...	3	2	...	...	...	...	1	1	2	...
September ...	36,727	2,305	62·8	23	·63	6	...	1	2	1	...	...	1	...	...	1	3	...	...	...	1	1	1	2	3
October ...	37,864	2,308	61·0	61	1·61	28	...	...	9	1	...	...	4	2	1	...	4	...	3	...	...	2	...	5	2
November ...	40,726	2,250	55·2	55	1·35	3	...	1	5	4	...	1	7	4	...	...	9	1	3	...	1	6	1	7	2
December ...	41,222	1,750	42·5	58	1·41	3	...	...	5	2	...	1	7	3	...	1	19	...	4	...	...	6	...	3	4
						182	3	4	44	35	2	4	46	29	5	11	121	3	37	1	7	26	10	39	38
						Died per 1,000 of the Average Strength.																			
For the year ...	39,179	1,751	44·7	647	16·51	4·64	·08	2·17				·10	1·17	·74	·13	·28	3·09	·08	·94	·02	·18	·66	·26	1·00	·97

Absent Deaths 247. Ratio of 894 Deaths, 20·08 per 1,000 of the Total Regimental Strength.

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	3	4	104	12	19	8	9	48	14	48	3	4	276	7·0	65·94
Smallpox ...	3	3	11	15	6	16	...	...	...	...	...	1	55	1·4	5·45
Dengue ...	...	...	...	209	420	273	399	762	1,634	690	141	19	4,547	116·1	...
Enteric Fever ...	...	...	...	...	1	2	1	...	1	1	1	...	7	·2	...
Fever, Intermittent ...	1,470	1,113	1,145	1,575	1,059	1,028	1,519	2,239	4,514	5,687	3,352	2,018	26,719	682·0	·17
„ Remittent and Continued ...	42	20	23	44	42	30	49	42	81	80	51	32	536	13·7	6·90
Apoplexy ...	...	...	3	4	...	1	1	...	...	...	1	...	10	·3	40·00
Dysentery ...	590	444	352	367	189	185	205	212	219	322	296	326	3,707	94·6	1·28
Diarrhœa ...	291	196	190	240	160	188	146	152	140	207	150	155	2,174	55·5	
Hepatitis ...	9	8	5	11	8	8	5	6	6	7	10	9	92	2·3	5·44
Spleen Disease ...	33	38	27	41	34	23	24	23	35	54	62	64	458	11·7	2·40
Respiratory Diseases ...	374	347	215	207	108	95	117	89	91	145	191	273	2,252	57·5	5·37
Phthisis Pulmonalis ...	5	8	12	14	11	12	10	8	9	8	7	6	110	2·8	33·64
Dropsy ...	2	...	...	...	...	...	2	...	1	1	3	...	9	·2	11·11
Scurvy ...	10	22	18	20	6	4	9	4	1	13	12	11	130	3·3	5·38
Rheumatism ...	289	274	221	181	143	124	167	122	108	188	212	229	2,258	57·6	·45
Venereal Diseases ...	113	93	66	109	82	89	102	89	76	95	119	120	1,153	29·4	
Eye Diseases ...	50	24	62	116	106	95	115	131	122	109	75	69	1,074	27·4	
Abscess and Ulcer ...	393	284	232	242	227	281	425	310	266	364	302	333	3,659	93·4	
Wounds and Accidents ...	471	376	401	459	312	318	407	352	302	446	473	440	4,757	121·4	
All other Causes ...	436	453	449	441	316	327	369	314	318	402	413	390	4,631	118·2	
	4,584	3,707	3,536	4,310	3,249	3,057	4,081	4,903	7,947	8,867	5,874	4,499	58,614		
	Admitted per 1,000 of the Average Strength in each Month.														
	106·2	86·0	82·6	111·9	89·5	84·0	111·2	133·8	216·4	234·2	144·2	109·1	1490·0		

NATIVE TROOPS, 1872.

II.

ABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in BENGAL PROPER and in ASSAM during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	6,352	344	64·3	12	...	1	...	...	1	1	...	...	1	1	...	...	2	...	3	1	1	...	...	...		...
February ...	5,855	382	65·2	6	...	...	...	...	1	...	...	...	1	1	...	...	...	...	1	...	1	...	...	...		1
March ...	6,347	445	70·1	13	...	5	...	...	2	1	...	...	...	...	...	...	1	...	...	...	2	1	...	1		...
April ...	7,429	517	69·6	13	...	3	...	...	1	...	...	1	2	1	...	...	1	...	1	...	...	1	...	1		1
May ...	7,065	410	58·0	13	...	5	...	...	...	1	...	...	...	...	...	...	1	...	1	...	...	1	...	1		3
June ...	6,948	391	56·3	9	...	2	...	1	..	...	...	...	1	1	...	...	1	...	3		...	...	...	...		...
July ...	6,921	376	54·3	7	...	...	...	...	...	2	...	...	1	...	...	1	1	...	...	...	...	...	...	...		2
August ...	6,835	389	56·0	6	...	...	...	1	1	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...		...
September ...	6,861	410	59·7	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...		2
October ...	6,970	395	56·7	4	...	...	...	...	2	...	...	...	2	...	...	...	...	...	...	..	...	...	...	...		...
November ...	6,506	379	58·3	10	...	1	...	1	...	1	...	...	2	...	...	...	1	...	...	...	1	2	...	1		...
December ...	6,830	345	50·5	12	...	1	...	...	...	1	...	...	3	...	...	...	2	...	1	...	...	3	...	...		1
						18	...	4	8	9	...	1	14	5	...	1	10	...	10	1	6	8	...	4		10
						Died per 1,000 of the Average Strength.																				
For the year ...	6,660	399	59·9	109	16·36*	2·70	...	3·16				·15	2·10	·75	...	·15	1·50	...	1·50	·15	·90	1·20	...	·60		1·50

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	1	...	7	5	8	4	4	3	...	4	1	2	39	5·9	46·15
Smallpox ...	1	2	3	4	2	...	...	...	...	...	...	...	12	1·8	...
Dengue ...	...	...	...	209	418	273	396	235	68	43	14	...	1,656	248·6	...
Enteric Fever ...	...	...	...	...	...	2	1	...	1	1	1	...	6	·9	...
Fever, Intermittent ...	203	176	192	598	253	243	314	285	319	435	435	412	3,865	580·3	·21
" Remittent and Continued ...	5	2	4	5	14	16	28	15	34	40	25	14	202	30·3	4·46
Apoplexy ...	...	...	1	2	...	...	...	...	...	...	...	...	3	·4	33·33
Dysentery ...	102	85	82	175	73	93	82	73	46	74	68	88	1,041	156·3	1·06
Diarrhœa ...	45	38	49	90	73	73	77	57	71	78	46	52	749	112·4	
Hepatitis ...	1	...	1	3	4	2	1	2	...	3	4	...	21	3·2	...
Spleen Disease ...	7	10	10	13	13	5	5	10	7	10	13	13	116	17·4	·86
Respiratory Diseases ...	55	50	56	66	33	34	29	23	25	49	40	59	518	77·8	1·93
Phthisis Pulmonalis ...	3	2	3	4	6	8	2	5	6	2	1	1	43	6·5	23·26
Dropsy ...	1	...	...	...	...	...	...	...	...	...	...	...	1	·2	...
Scurvy ...	4	3	3	12	5	1	6	...	1	8	9	7	59	8·9	10·17
Rheumatism ...	42	48	35	42	41	23	46	28	25	36	39	48	452	67·9	·33
Venereal Diseases ...	14	18	12	21	14	15	15	13	7	15	21	14	179	26·9	
Eye Diseases ...	3	3	5	12	8	7	13	15	18	26	8	15	133	20·0	
Abscess and Ulcer ...	33	42	38	44	41	47	57	43	34	55	50	56	546	82·0	
Wounds and Accidents...	61	70	81	92	70	89	98	97	92	116	68	49	983	147·6	
All other Causes ...	82	84	102	119	111	108	130	94	105	139	110	101	1,285	192·9	
	663	633	684	1,616	1,187	1,043	1,303	997	859	1,134	959	931	11,909		
	Admitted per 1,000 of the Average Strength in each Month.														
	123·9	108·1	107·8	204·1	168·0	150·1	188·3	145·9	125·2	162·7	147·4	136·3	1788·2		

---

* In the Regimental Table the Deaths of this Province are shown as 243; 191 Deaths of men present with their Regiments, and 52 of men absent. With a trength of 8,152, 243 Deaths give a ratio of 29·81 per 1,000. Regiments of this Province attached to the Looshaie Force in the first three months of the year lost 83 men hile on field service, whose deaths do not appear in this Table.

NATIVE TROOPS, 1872.

III.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the DINAPORE, BENARES, OUDE and CAWNPORE DISTRICTS during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																			
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	5,548	193	34·8	7	...	...	...	...	...	...	...	...	1	...	...	1	3	...	...	...	...	...	1	1	...
February ...	6,126	202	33·0	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
March ...	5,813	160	27·5	3	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...	...	...
April ...	5,790	191	33·0	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
May ...	5,748	153	26·6	10	...	5	...	...	1	...	...	...	...	...	...	1	1	1	1	...	...	...	...	...	...
June ...	5,930	163	27·5	7	...	1	1	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	1	...	1
July ...	5,944	165	27·8	5	...	2	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...
August ...	5,893	240	40·7	4	...	3	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
September ...	5,917	318	53·7	4	...	2	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
October ...	6,047	338	55·9	5	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	1	1
November ...	5,954	262	44·0	3	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...
December ...	6,085	240	39·4	4	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
						14	1	...	2	2	1	...	3	...	2	3	11	1	5	...	...	2	3	3	2
						Died per 1,000 of the Average Strength.																			
For the year ...	5,900	219	37·1	55	9·33*	2·37	·17	·85				...	·51	...	·34	·51	1·86	·17	·85	...	...	·34	·51	·51	·34

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	1	7	2	2	6	2	...	...	1	21	3·6	66·67
Smallpox ...	...	1	7	7	2	3	...	...	...	...	...	...	20	3·4	5·00
Dengue ...	...	...	...	...	2	...	3	413	630	449	88	8	1,593	270·0	...
Enteric Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ..	113	99	78	148	144	180	285	226	354	554	279	232	2,692	456·2	·08
„ Remittent and Continued ...	4	3	3	8	10	4	3	3	13	5	10	2	68	11·5	4·41
Apoplexy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery ...	31	18	14	34	17	22	31	38	37	50	38	46	376	63·7	·57
Diarrhœa ...	2	4	9	15	17	17	12	27	13	17	9	9	151	25·6	
Hepatitis ...	1	...	...	3	...	2	2	1	...	2	...	1	12	2·0	16·67
Spleen Disease ...	6	3	1	2	1	...	1	...	4	4	4	2	28	4·8	10·72
Respiratory Diseases ...	31	27	15	19	14	9	12	18	9	13	24	27	218	37·0	5·05
Phthisis Pulmonalis ...	...	1	3	1	2	2	2	...	1	2	2	1	17	2·9	29·41
Dropsy ...	...	...	...	...	...	...	...	...	...	...	1	...	1	·2	...
Scurvy ...	2	...	1	4	...	...	...	2	...	1	1	...	11	1·8	...
Rheumatism ...	27	21	23	11	18	17	20	19	23	43	42	59	323	54·7	·38
Venereal Diseases ...	18	9	9	11	10	15	16	14	15	9	21	26	173	29·3	
Eye Diseases ...	10	3	9	27	19	24	27	19	14	16	6	11	185	31·4	
Abscess and Ulcer ...	51	35	33	45	35	43	74	39	43	62	29	61	550	93·2	
Wounds and Accidents ..	29	33	42	59	45	32	58	52	59	80	72	62	623	105·6	
All other Causes ...	53	48	41	46	34	50	44	40	35	46	53	31	521	88·3	
	378	305	288	441	377	422	592	917	1,252	1,353	679	579	7,583		
	Admitted per 1,000 of the Average Strength in each Month.														
	68·1	49·8	49·5	76·2	65·6	71·2	99·6	155·6	211·6	223·7	114·0	95·2	1285·2		

---

* For Statement of Absent Deaths, see Regimental Table XVII Section 2.

NATIVE TROOPS, 1872.

IV.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the MEERUT DISTRICT and in ROHILCUND during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																			
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	2,525	60	23·8	4	...	...	...	..	2	...	...	...	...	...	...	...	1	...	1	...		...	...	...	...
February ...	4,583	136	29·7	10	...	...	...	...	...	...	...	...	...	...	...	...	5	...	2	...	...	1	...	1	1
March ...	4,985	141	28·3	4	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	.	...	...	1	...
April ...	5,060	159	31·4	10	...	...	...	...	..	1	...	...	...	1	1	1	1	1	3	...	...	...	...	1	...
May ...	4,606	152	33·0	4	...	...	1	...	...	...	1	..	...	...	...	...	1	..	...	...	...	1	...	...	...
June ...	4,596	145	31·6	4	...	...	...	...	...	...	...	1	...	...	...	...	1	..	...	...	...	...	...	1	1
July ...	4,707	128	27·2	6	...	1	...	...	...	1	...	...	1	1	...	...	...	...	2	...	...	..	..	...	...
August ...	4,737	179	37·8	13	...	11	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
September ...	4,698	263	56·0	4	...	2	...	...	1	..	...	..	.	...	...	...	...	...	...	...	...	1	...	...	...
October ...	4,758	188	39·5	5	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	.	...	1	...	1	...
November ...	5,197	166	32·0	10	..	1	...	...	1	...	...	1	..	...	...	...	2	1	1	...	...	1	...	2	...
December ...	5,268	151	28·7	4	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	1	...	...	...
						15	1	...	6	4	1	2	2	2	1	1	15	2	10	..	...	6	1	7	2
						Died per 1,000 of the Average Strength.																			
For the year ...	4,643	156	33·6	78	16·80*	3·23	·22	2·37				·43	·43	·43	·22	·22	3·23	·43	2·15	...	...	1·29	·21	1·50	·43

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	1	15	5	...	1	...	22	4·7	68·18
Smallpox ...	...	...	...	2	..	...	...	...	...	...	...	1	3	·7	33·33
Dengue ...	..	...	...	...	...	...	...	...	125	9	17	5	156	33·6	...
Enteric Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	26	69	64	183	110	97	179	314	559	332	103	77	2,113	455·1	·28
„ Remittent and Continued ...	1	2	4	6	3	5	6	11	5	12	7	4	66	14·2	7·58
Apoplexy ...	...	...	...	2	...	1	...	...	...	...	1	...	4	·9	50·00
Dysentery ...	5	5	13	14	17	14	10	8	10	25	18	14	153	33·0	1·56
Diarrhœa ...	4	4	3	22	11	12	11	12	5	12	4	4	104	22·4	
Hepatitis ...	...	1	1	2	...	1	...	...	1	1	1	6	14	3·0	7·14
Spleen Disease ...	...	2	5	18	11	9	6	1	6	4	6	7	75	16·1	1·33
Respiratory Diseases ...	7	41	13	20	10	7	10	9	10	12	17	20	176	37·9	8·52
Phthisis Pulmonalis ...	1	2	2	3	1	1	2	1	...	1	2	2	18	3·9	55·56
Dropsy ...	...	...	...	...	...	...	...	...	...	1	...	.	1	·2	...
Scurvy ...	1	1	2	...	...	...	...	..	...	...	...	...	4	·9	...
Rheumatism ...	8	25	16	15	11	14	10	5	4	15	9	15	147	31·7	1·00
Venereal Diseases ...	10	9	13	22	21	18	17	23	13	16	18	15	195	42·0	
Eye Diseases ...	7	1	10	17	10	9	17	6	14	9	7	13	120	25·8	
Abscess and Ulcer ...	16	21	15	31	26	35	40	34	31	36	37	29	351	75·6	
Wounds and Accidents ...	8	28	19	45	46	39	33	30	29	35	52	45	409	88·1	
All other Causes ...	24	61	36	54	26	22	24	14	20	29	28	34	381	82·0	
	118	272	216	456	303	284	366	483	846	540	328	291	4,512		
	Admitted per 1,000 of the Average Strength in each Month.														
	46·7	59·4	43·3	90·1	65·8	61·8	77·7	102·0	180·1	115·4	63·1	55·2	971·8		

* For Statement of Absent Deaths, see Regimental Table XVII, Section 3.

NATIVE TROOPS, 1872.

V.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the AGRA DISTRICT and in CENTRAL INDIA during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

(Several of the Stations of this area usually occupied by Regiments of the Bengal Army were in 1872 occupied by Madras Troops. The Statistics of the Madras Troops occupying Stations of the Bengal Presidency are given in Table XVIII.)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																			Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	3,517	237	67·4	7	...	...	...	...	1	...	...	...	...	...	...	1	4	...	...	...	...	...	...	1	...
February ...	4,330	222	51·3	3	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	1	...	...	...
March ...	4,392	178	40·5	5	...	...	...	...	...	...	...	...	...	1	...	...	4	...	...	...	...	...	...	...	...
April ...	3,753	124	33·0	4	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	1
May ...	3,583	124	34·6	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
June ...	3,621	125	34·5	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
July ...	3,727	130	34·9	4	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	1
August ...	3,754	171	45·6	2	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
September ...	3,796	416	109·6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
October ...	3,952	331	83·8	5	...	...	...	...	3	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
November ...	3,855	278	72·1	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	1	...
December ...	3,843	262	68·2	3	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
						...	...	...	7	...	...	...	...	1	1	1	17	...	3	...	...	1	1	5	4
						Died per 1,000 of the Average Strength.																			
For the year ...	3,844	216	56·2	41	10·67*	...	...	1·82				...	...	·26	·26	·26	4·43	...	·78	...	...	·26	·26	1·30	1·04

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dengue ...	...	...	...	...	...	...	...	114	811	172	19	2	1,118	290·8	...
Enteric Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	276	179	132	185	201	157	216	234	378	632	388	323	3,301	858·8	·21
„ Remittent and „ Continued ...	...	...	2	...	2	...	2	...	...	3	...	3	12	3·1	...
Apoplexy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery ...	17	7	3	18	8	5	27	31	18	19	12	18	183	47·6	·38
Diarrhœa ...	5	3	6	9	1	7	8	11	9	8	7	6	80	20·8	
Hepatitis ...	1	1	1	...	2	1	...	2	2	...	1	1	12	3·1	8·33
Spleen Disease ...	4	6	3	2	1	2	5	5	5	2	7	10	52	13·5	1·92
Respiratory Diseases ...	53	63	18	17	7	17	17	7	4	8	23	31	255	66·3	6·67
Phthisis Pulmonalis ...	...	...	2	2	1	...	1	...	...	...	...	...	6	1·6	50·00
Dropsy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scurvy ...	...	...	1	...	...	1	...	...	...	...	...	1	3	·8	...
Rheumatism ...	48	43	28	18	14	13	15	19	13	19	24	28	282	73·4	·31
Venereal Diseases ...	16	19	9	10	15	16	15	16	13	26	19	23	206	53·6	
Eye Diseases ...	5	5	8	12	6	9	9	18	10	8	13	6	109	28·4	
Abscess and Ulcer ...	70	50	35	27	36	50	56	57	59	62	42	51	595	154·8	
Wounds and Accidents ...	80	51	57	43	29	26	48	56	36	71	62	80	639	166·2	
All other Causes ...	40	31	33	41	40	44	36	27	25	35	37	44	433	112·6	
	615	448	338	393	363	348	455	597	1,383	1,065	654	627	7,286		
	Admitted per 1,000 of the Average Strength in each Month.														
	174·9	103·5	77·0	104·7	101·3	96·1	122·1	159·0	364·3	269·5	169·7	163·2	1895·4		

---

* For Statement of Absent Deaths, see Regimental Table XVII, Section 4.

NATIVE TROOPS, 1872.

VI.

ABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS serving in the PUNJAB during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
anuary ...	13,496	466	34·5	23	...	...	...	...	...	4	...	...	3	2	...	...	8	...	...	...	...	2	1	3	...
ebruary ...	15,591	451	28·9	10	...	...	...	...	...	2	...	...	...	1	...	...	4	...	2	...	...	...	...	...	1
larch ...	16,700	427	25·6	10	...	...	...	...	2	...	...	...	...	...	...	...	4	...	2	...	...	...	1	1	...
pril ...	15,208	420	27·7	12	...	...	...	...	...	...	...	...	...	1	...	...	8	...	...	...	1	1	...	1	...
lay ...	15,244	453	29·7	10	...	...	...	...	1	1	...	...	...	1	...	...	1	...	3	...	...	...	...	1	2
une ...	15,260	415	27·2	8	...	...	...	...	...	2	...	...	...	1	...	...	2	...	...	...	...	...	...	2	1
uly ...	15,354	453	29·5	10	...	1	1	...	1	2	...	...	...	...	...	1	1	...	...	...	...	...	...	...	3
ugust ...	15,439	602	39·0	19	...	12	...	...	1	...	...	...	...	...	...	2	1	...	...	...	...	1	...	2	...
eptember ...	15,455	898	58·1	10	...	2	...	...	1	...	...	...	1	...	...	1	2	...	...	...	...	...	...	2	1
ctober ...	15,937	1,045	65·6	42	...	28	...	...	3	1	...	...	2	2	...	...	2	...	...	...	...	1	...	2	1
ovember ...	17,049	1,056	61·9	24	...	1	...	...	4	3	...	...	3	3	...	...	3	...	...	...	...	3	...	3	1
ecember ...	17,821	711	39·9	34	...	...	...	...	3	1	...	1	3	3	...	1	14	...	2	...	...	1	...	3	2
						44	1	...	16	16	...	1	12	14	...	5	50	...	9	...	1	9	2	20	12
						Died per 1,000 of the Average Strength.																			
or the year ...	15,712	616	39·2	212	3·49*	2·80	·06	2·03				·06	·77	·89	...	·32	3·18	...	·57	...	·06	·57	·13	1·28	·77

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
iolera ...	...	...	...	2	...	...	2	24	7	44	1	...	80	5·1	55·00
nallpox ...	1	...	1	2	2	13	...	...	...	...	...	...	19	1·2	5·26
engue ...	...	...	...	...	...	...	...	...	...	2	3	4	9	·6	...
nteric Fever ...	...	...	...	...	1	...	...	...	...	...	...	...	1	·1	...
ever, Intermittent ...	349	293	223	371	341	351	525	1,180	2,904	3,732	1,982	953	13,204	840·4	·12
„ Remittent and Continued ...	20	10	6	23	13	5	10	13	29	20	9	9	167	10·6	9·58
poplexy ...	...	...	...	...	...	...	1	...	...	...	...	...	1	·1	...
ysentery ..	51	32	27	84	74	51	55	62	108	154	140	133	971	61·8	1·71
iarrhœa ...	18	21	7	52	52	29	38	45	51	90	76	70	549	34·9	
epatitis ...	1	3	1	2	2	2	2	1	3	1	4	1	23	1·5	...
pleen Disease ...	9	6	7	6	8	7	7	7	13	34	31	32	167	10·6	3·00
espiratory Diseases ...	95	88	60	72	44	28	49	33	43	62	78	128	780	49·6	6·41
hthisis Pulmonalis ...	1	2	2	4	1	1	3	2	2	3	2	2	25	1·6	36·00
ropsy ...	1	...	...	...	...	...	2	...	1	...	2	...	6	·4	...
curvy ...	1	...	4	2	1	2	3	2	...	4	2	3	24	1·5	4·17
heumatism ...	87	77	71	83	59	57	77	51	43	75	88	75	843	53·7	·49
enereal Diseases ...	25	23	20	36	20	25	39	23	28	29	40	40	348	22·2	
ye Diseases ...	22	4	25	46	62	46	49	73	66	50	38	24	505	32·1	
bscess and Ulcer ...	143	101	87	90	89	106	198	137	99	146	121	124	1,441	91·7	
ounds and Accidents ...	125	86	104	187	122	132	170	117	86	142	163	198	1,632	103·9	
ll other Causes ...	107	77	107	158	105	103	135	130	124	153	179	169	1,556	99·0	
	1,056	823	752	1,220	998	958	1,365	1,909	3,607	4,741	2,959	1,965	22,351		
	Admitted per 1,000 of the Average Strength in each Month.														
	78·3	52·8	45·0	80·2	65·3	62·8	88·9	123·7	233·4	297·5	173·6	110·3	1422·6		

---

* For Statement of Absent Deaths, see Regimental Table XVII, Section 5.

NATIVE TROOPS, 1872.

VII.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS composing the CENTRAL INDIA IRREGULAR FORCE during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

MONTHS	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS IN HOSPITAL.																			Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	4,740	158	33·3	8	...	...	...	...	1	1	...	...	...	...	...	...	5	...	...	...	...	...	...	1	...
February ...	4,555	153	33·6	9	...	...	...	...	1	...	...	...	1	...	...	1	6	...	...	...	...	...	...	...	...
March ...	4,440	144	32·4	5	...	...	...	...	...	2	...	...	...	...	...	..	1	...	...	...	...	...	...	2	...
April ...	4,244	139	32·8	6	...	...	...	...	...	...	...	...	..	2	...	...	3	...	1	..	...	...	...	...	...
May ...	4,085	137	33·5	3	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
June ...	4,319	133	30·8	2	...	...	...	...	...	...	..	1	..	...	...	...	1	...	...	...	...	...	...	...	...
July ...	4,272	150	35·1	8	...	3	...	...	...	...	...	...	1	1	...	..	1	...	...	.	...	...	...	1	1
August ...	4,476	177	39·5	4	...	1	...	...	...	...	...	...	1	...	...	...	2	...	...	..	...	...	...	...	...
September ...	4,435	199	44·9	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..	...	...	...	...	...
October ...	4,496	251	55·8	3	...	...	...	...	...	..	..	...	2	..	...	...	...	...	...	...	...	...	...	1	...
November ...	4,670	231	49·5	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
December ...	4,599	169	36·7	6	...	...	...	...	...	...	...	..	1	...	...	...	2	...	...	...	...	...	...	2	1
						4	...	...	4	4	...	1	6	3	...	1	22	...	1	..	...	...	...	8	2
						Died per 1,000 of the Average Strength.																			
For the year ...	4,444	170	38·3	56	12·61	·90	...	1·80				·23	1·35	·67	...	·23	4·95	...	·23	...	...	..	...	1·80	·45

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	1	...	7	...	...	...	...	...	8	1·8	50·00
Smallpox ...	...	...	1	1	...	...	...	...	...	...	...	...	2	·5	...
Dengue ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	145	97	97	136	96	69	90	116	236	657	341	158	2,238	503·6	·18
" Remittent and Continued ...	8	9	8	6	5	...	2	1	3	1	3	1	47	10·6	8·51
Apoplexy ...	...	...	...	...	...	1	...	...	...	...	...	...	1	·2	...
Dysentery ...	19	6	8	15	11	13	35	26	12	9	11	21	186	41·9	2·45
Diarrhœa ...	9	3	9	9	12	17	41	31	10	11	14	15	181	40·7	
Hepatitis ...	1	...	...	1	...	...	2	...	2	1	1	...	8	1·8	...
Spleen Disease ...	2	4	1	4	3	3	1	1	1	9	4	3	36	8·1	2·78
Respiratory Diseases ...	23	37	31	31	13	12	6	8	13	15	19	25	233	52·4	9·44
Phthisis Pulmonalis ...	...	...	...	1	...	...	...	...	...	...	...	...	1	·2	...
Dropsy ...	...	...	...	...	...	1	...	...	1	...	...	...	2	·5	...
Scurvy ...	...	1	...	2	1	...	1	...	...	...	1	...	6	1·4	...
Rheumatism ...	13	24	20	16	25	19	17	16	23	17	13	21	224	50·4	·43
Venereal Diseases ...	7	12	11	8	11	11	11	6	3	13	11	9	113	25·4	
Eye Diseases ...	12	13	15	31	13	7	24	30	30	24	17	25	241	54·2	
Abscess and Ulcer ...	50	29	21	29	36	33	53	43	26	34	28	38	420	94·5	
Wounds and Accidents ...	38	35	19	31	16	22	36	28	37	49	27	39	377	84·8	
All other Causes ...	36	25	31	51	56	44	57	47	37	57	16	22	479	107·8	
	363	295	272	372	299	252	383	353	434	897	506	377	4,803		
	Admitted per 1,000 of the Average Strength in each Month.														
	70·6	64·7	61·3	87·6	73·2	58·4	89·7	78·9	97·9	199·5	108·4	82·0	1080·8		

The Total Strength of the Corps of the Central India Force was 5,609, and out of this Strength the Deaths were 76, which gives a ratio of 13·55 per 1,000.

The Gain and Loss Statement for the year is as under :—

Strength borne on the Rolls at the beginning of the year ...	5,605
Additions received during the year ...	464
TOTAL ...	6,069
Deaths at Head-quarters and in detachments 56; on furlough 6; on sick leave 14; invalided for discharge 155; otherwise discharged 221 ...	452
Remaining on the Rolls of the Regiments on 31st December ...	5,617

NATIVE TROOPS, 1872.

VIII.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS composing the PUNJAB IRREGULAR FORCE during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																				Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		
January ...	11,095	617	55·6	26	...	...	...	...	1	8	...	...	2	1	1	...	10	...	1	..	...	...	...	2		...
February ...	11,134	589	52·9	22	...	...	...	...	...	8	...	1	...	...	.	...	11	...	...	...	...	...	...	2		...
March ...	10,086	424	39·7	7	...	...	...	...	...	...	...	...	1	...	...	...	4	...	..	...	...	...	1	1		...
April ...	9,693	277	28·6	9	...	...	...	...	...	5	...	...	...	...	..	...	2	...	1	...	...	...	...	...		1
May ...	8,964	298	33·2	5	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	..	...	...	...	1		1
June ...	9,142	322	35·2	8	...	1	..	1	3	1	...	1	...	...	...	...	...	...	...	...	..	...	...	1		...
July ...	9,286	367	39·5	3	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...	...	...	...	...		..
August ...	9,340	480	51·4	30	...	27	...	...	...	1	.	...	...	...	...	...	...	...	...	...	...	...	1	...		1
September ...	9,510	652	68·6	42	...	33	...	...	2	...	...	1	2	2	...	...	1	...	...	...	...	...	...	1		...
October ...	9,466	794	83·9	9	...	...	...	1	...	...	...	2	4	...	...	...	...	...	...	...	..	1	...	1		...
November ...	10,689	798	74·7	16	...	...	...	...	...	4	...	...	1	1	...	...	6	...	1	...	...	...	1	1		...
December ...	11,257	695	61·7	36	...	1	1	...	1	6	...	...	5	1	...	2	18	...	...	...	...	1	...	...		...
						62	1	2	7	34	...	6	15	5	1	2	55	...	4	...	...	2	3	10		3
						Died per 1,000 of the Average Strength.																				
For the year ...	10,022	526	52·5	212	21·16	6·18	·10	4·29				·60	1·50	·50	·10	·20	5·49	...	·40	...	...	·20	·30	1·00		·30

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera	...	...	...	...	..	1	...	44	47	1	...	...	93	9·3	66·67
Smallpox	...	1	...	...	...	...	...	1	...	...	2	3	7	·7	14·29
Dengue ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	...	...	...	...	...	1	...	...	...	1	...	...	2	·2	...
Fever, Intermittent ..	616	462	271	305	285	368	451	836	1,601	2,872	1,700	989	10,756	1,073·2	·07
„ Remittent and Continued ...	53	41	16	10	5	8	10	2	5	11	16	25	202	20·2	16·83
Apoplexy ...	...	...	...	...	...	2	1	...	1	...	...	...	4	·4	100·00
Dysentery	76	37	37	48	51	35	77	104	106	121	89	86	867	86·5	1·28
Diarrhœa	58	33	26	50	47	63	74	85	133	62	47	55	723	72·2	
Hepatitis	3	1	2	...	2	3	1	...	3	6	...	2	23	2·3	4·35
Spleen Disease ..	20	15	8	7	7	2	6	6	10	27	39	58	205	20·4	·97
Respiratory Diseases ...	162	120	54	67	61	20	25	22	13	18	60	137	759	75·7	7·25
Phthisis Pulmonalis ...	2	5	2	...	4	2	1	1	1	...	3	1	22	2·2	18·18
Dropsy ...	...	...	...	...	...	...	...	...	...	...	...	1	1	·1	...
Scurvy ...	2	2	5	10	2	1	2	2	1	5	1	2	35	3·5	...
Rheumatism ...	96	89	64	46	32	46	54	44	48	52	69	79	719	71·7	·28
Venereal Diseases ...	16	19	7	13	24	16	22	13	16	17	19	13	195	19·5	
Eye Diseases ...	10	17	12	22	31	21	35	24	35	32	18	14	271	27·0	
Abscess and Ulcer ...	145	97	66	89	87	105	226	166	121	128	122	116	1,468	146·5	
Wounds and Accidents ...	125	119	89	133	83	102	122	103	103	108	113	154	1,364	136·1	
All other Causes ...	108	108	88	109	91	128	155	108	129	103	90	110	1,327	132·4	
	1,492	1,166	747	909	822	914	1,262	1,561	2,373	3,564	2,388	1,845	19,043		
	Admitted per 1,000 of the Average Strength in each Month.														
	134·5	104·7	69·0	93·8	91·7	100·0	135·9	167·1	249·5	376·5	223·4	163·9	1900·1		

Calculated on a Strength of 12,314, the Total Strength absent as well as present, the Death-rate of the year is 23·47 per 1,000—the equivalent of 289 deaths.

The Gain and Loss Statement for the Frontier Force for the year is as under :—

Strength borne on the Regimental Rolls on 1st January 1872	12 369
Additions received during the year	1,104
TOTAL ...	13,473
Deaths at Head-quarters and in Detachments 214; died while on furlough and sick leave 75; invalided for discharge 234; transfers given 24; discharged otherwise 690	1,237
Remaining on the Rolls at the close of 1872	12,236

NATIVE TROOPS, 1872.

IX.

TABLE showing the SICKNESS and MORTALITY among the NATIVE TROOPS of the REGULAR ARMY and of the PUNJAB FRONTIER FORCE serving TRANS-INDUS during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

This Table contains the entire of the figures shown in the Statement for the Punjab Frontier Force, with the exception of the Statistics of Abbottabad, as well as the Statistics of the Regiments of the Regular Native Army serving beyond the Indus, already incorporated in the General Statement for the Punjab.)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																			Died out of Hospital.
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	
January ...	14,311	722	50·4	35	...	...	...	...	...	10	...	...	4	1	...	...	14	1	1	...	...	1	1	2	...
February ...	14,422	657	45·6	25	...	...	...	...	...	10	...	...	...	...	...	...	13	...	...	...	...	...	...	1	1
March ...	14,238	496	34·8	11	...	...	...	...	2	...	...	...	1	...	...	...	3	...	2	...	...	...	2	1	...
April ...	12,659	327	25·8	12	...	...	...	...	...	5	...	...	...	1	...	...	3	...	...	...	1	...	...	1	1
May ...	11,866	329	27·7	3	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
June ...	12,062	355	29·4	8	...	...	...	...	3	2	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...
July ...	12,134	414	34·1	5	...	...	...	...	...	...	...	1	...	...	...	1	2	...	...	...	...	...	...	...	1
August ...	12,273	549	44·7	31	...	27	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1
September ...	12,357	812	65·7	46	...	33	...	...	3	...	...	1	3	2	...	1	1	...	...	...	...	...	...	1	1
October ...	12,552	1,025	81·7	42	...	28	...	1	1	1	...	2	4	...	...	...	2	...	...	...	..	2	...	1	...
November ...	13,881	1,017	73·3	24	...	1	...	...	...	6	...	...	3	3	...	...	7	...	...	...	...	1	1	2	...
December ...	14,302	802	55·8	49	...	1	...	...	2	6	...	1	6	3	...	2	24	...	...	...	...	2	...	1	1
						90	...	1	12	42	...	6	21	11	...	4	70	1	3	...	1	6	4	13	6
						Died per 1,000 of the Average Strength.																			
For the year ...	13,093	625	47·7	291	22·23	6·87	...	4·20				·46	1·60	·84	...	·31	5·34	·08	·23	...	·08	·46	·31	·99	·46

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ..	...	...	...	...	...	...	...	44	47	45	1	...	137	10·5	65·70
Smallpox ..	1	...	...	...	1	1	...	1	...	...	2	2	8	·6	...
Dengue ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ..	...	...	...	...	...	...	..	...	...	1	...	...	1	1	...
Fever, Intermittent .	717	542	338	337	312	382	521	1,066	2,525	4,107	2,319	1,245	14,411	1100·7	·08
„ Remittent and Continued ...	62	46	20	14	9	6	11	2	7	13	18	28	236	18·0	17·80
Apoplexy ...	...	...	...	...	...	2	1	...	1	...	...	...	4	·3	100·00
Dysentery ..	112	50	49	71	67	53	92	114	138	190	140	144	1,220	93·2	1·53
Diarrhœa . .	65	40	25	61	54	48	65	94	149	113	80	82	876	66·9	
Hepatitis ..	1	1	2	...	...	3	3	...	3	7	...	2	22	1·7	...
Spleen Disease ..	24	17	8	6	7	2	5	8	14	40	45	66	242	18·5	1·65
Respiratory Diseases ...	171	129	66	59	42	19	24	22	24	34	70	179	839	64·1	8·34
Phthisis Pulmonalis ...	1	3	4	1	2	2	...	1	1	...	1	1	17	1·3	17·65
Dropsy ...	1	...	...	...	...	...	1	...	...	...	...	1	3	·2	...
Scurvy ..	2	1	4	3	1	...	1	1	1	5	1	2	22	1·7	4·55
Rheumatism ..	111	90	72	64	87	47	57	41	43	52	72	84	773	59·0	·40
Venereal Diseases ..	13	28	8	21	27	22	27	18	24	19	29	15	251	19·2	
Eye Diseases ..	13	18	14	35	43	27	49	32	42	39	19	14	345	26·3	
Abscess and Ulcer .	184	110	78	97	102	119	272	184	121	130	125	115	1,637	125·0	
Wounds and Accidents ...	102	144	115	150	108	112	134	94	88	99	120	140	1,466	112·0	
All other Causes ...	129	122	111	129	89	125	160	113	142	139	155	150	1,573	120·1	
	1,769	1,341	914	1,048	901	970	1,423	1,838	3,370	5,033	3,197	2,279	24,083		
	Admitted per 1,000 of the Average Strength in each Month.														
	123·6	93·0	64·2	82·8	75·9	80·4	117·3	149·8	272·7	401·0	230·3	158·7	1839·4		

NATIVE TROOPS, 1872.

X.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the NATIVE TROOPS serving in the various PROVINCES of the BENGAL PRESIDENCY for the Year 1872.

	Bengal Proper and Assam.	Gangetic Provinces.	Rohilcund and Meerut.	Agra and Central India.	Punjab.	Regular Native Army.	Punjab Frontier Force.	Central India Force.
	RATIOS PER 1,000 OF STRENGTH.							
I.—AVERAGE DAILY SICK-RATE OF EACH MONTH.								
January	64·3	34·8	23·8	67·4	34·5	44·9	55·0	33·3
February	65·2	33·0	29·7	51·3	28·9	41·5	52·9	33·6
March	70·1	27·5	28·3	40·5	25·6	41·4	39·7	32·4
April	69·6	33·0	31·4	33·0	27·7	40·0	28·6	32·8
May	58·0	26·8	33·0	34·6	29·7	35·8	33·2	33·5
June	56·3	27·5	31·6	34·5	27·2	34·0	35·2	30·8
July	54·3	27·8	27·2	34·9	20·5	31·1	39·5	35·1
August	56·9	40·7	37·8	45·6	39·0	43·1	51·4	39·5
September	59·7	53·7	50·0	109·6	58·1	62·8	68·6	44·9
October	56·7	55·9	39·5	83·8	65·6	61·0	83·9	55·8
November	58·3	44·0	32·0	72·1	61·9	55·2	74·7	49·5
December	50·5	39·4	28·7	68·2	30·9	42·5	61·7	36·7
AVERAGE OF THE YEAR ...	59·9	37·1	33·6	56·2	39·2	44·7	52·5	38·3
II.—COMPOSITION OF THE ADMISSION-RATE OF THE YEAR.								
Dengue	248·6	270·0	83·6	290·8	·6	116·1	...	...
Cholera	5·9	3·6	4·7	...	5·1	7·0	9·3	1·8
Intermittent Fevers	580·3	456·2	455·1	858·8	840·4	682·0	1073·2	503·6
Remittent and Continued Fevers ...	30·3	11·5	14·2	3·1	10·0	13·7	20·2	10·6
Apoplexy	·4	...	·9	...	·1	·3	·4	·2
Dysentery	156·3	63·7	33·0	47·6	61·8	94·6	86·5	41·0
Diarrhœa	112·4	25·6	22·4	20·8	34·9	55·5	72·2	40·7
Hepatitis	3·2	2·0	3·0	3·1	1·5	2·3	2·3	1·8
Spleen Disease	17·4	4·8	16·1	13·5	10·6	11·7	20·4	8·1
Respiratory Diseases	77·8	37·0	37·9	66·3	40·6	57·5	75·7	52·4
Phthisis Pulmonalis	6·5	2·9	3·9	1·6	1·6	2·8	2·2	·2
Scurvy	8·9	1·8	·9	·8	1·5	3·3	3·5	1·4
Rheumatism	67·9	54·7	31·7	73·4	53·7	57·6	71·7	50·4
Venereal Diseases	26·9	29·3	42·0	53·6	22·2	20·4	19·5	25·4
Eye Diseases	20·0	31·4	25·8	28·4	32·1	27·4	27·0	54·2
Abscess and Ulcer	82·0	93·2	75·6	154·8	91·7	93·4	146·5	94·5
Wounds and Accidents	147·6	105·6	88·1	166·2	103·9	121·4	136·1	84·8
All other Causes	195·8	91·9	82·9	112·6	100·7	120·0	133·4	108·8
ADMISSION-RATE OF THE YEAR ...	1788·2	1285·2	971·8	1895·4	1422·6	1496·0	1900·1	1080·8
III.—COMPOSITION OF THE DEATH-RATE OF THE YEAR.								
Cholera	2·70	2·37	3·23	...	2·80	4·64	6·18	·90
Fevers	3·16	·85	2·37	1·82	2·03	2·17	4·29	1·80
Apoplexy	·15	...	·43	...	·06	·10	·60	·23
Dysentery	2·10	·51	·43	...	·77	1·17	1·50	1·35
Diarrhœa	·75	...	·43	·26	·89	·74	·50	·67
Hepatitis	...	·34	·22	·26	...	·13	·10	...
Spleen Disease	·15	·51	·22	·26	·32	·28	·20	·23
Respiratory Diseases	1·50	1·86	3·23	4·43	3·18	3·09	5·49	4·95
Heart Diseases	...	·17	·43	...	...	·08	...	...
Phthisis Pulmonalis	1·50	·85	2·15	·78	·57	·94	·40	·23
Atrophy and Anæmia	1·20	·34	1·29	·26	·57	·06	·20	...
All other Causes	1·65	·68	1·72	1·30	1·40	1·28	1·10	1·80
Wounds and Accidents	...	·51	·22	·26	·13	·26	·30	...
Deaths Out of Hospital	1·50	·34	·43	1·04	·77	·97	·30	·45
DEATH-RATE OF THE YEAR ...	16·36	9·33	16·80	10·67	13·49	16·51	21·16	12·61
„ INCLUDING ABSENT DEATHS ...	...	...	...	...	...	20·08	23·47	13·55
	DIED OUT OF EACH HUNDRED CASES TREATED.							
IV.—MORTALITY RELATIVE TO THE NUMBER TREATED.								
Cholera	46·15	66·67	68·18	...	55·00	65·64	66·67	50·00
Intermittent Fevers	·21	·08	·28	·21	·12	·17	·07	·18
Remittent and Continued Fevers ...	4·40	4·41	7·58	...	9·58	6·90	16·83	8·51
Apoplexy	33·33	...	50·00	...	...	40·00	100·00	...
Dysentery and Diarrhœa	1·06	·57	1·56	·38	1·71	1·28	1·26	2·45
Hepatitis	...	16·67	7·14	8·33	...	5·44	4·35	...
Spleen Disease	·88	10·72	1·33	1·92	3·00	2·40	·97	2·78
Respiratory Diseases	1·83	5·05	8·52	6·67	6·41	5·37	7·25	9·44
Phthisis Pulmonalis	23·26	29·41	55·56	50·00	36·00	33·64	18·18	...
Scurvy	10·17	...	...	...	4·17	5·38	...	...

NATIVE TROOPS, 1872.

XI.

TABLE showing the DAILY AVERAGE SICK-RATE of each STATION in each MONTH.

STATIONS.	Average Strength for the period of observation.	DAILY SICK PER 1,000 OF AVERAGE STRENGTH IN EACH MONTH.												Average Daily Sick per 1,000 of Strength during the period of observation.	Ratio for each Province.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.		
Fort William ...	564	77·6	72·3	59·6	84·4	87·0	64·7	52·4	70·5	86·1	65·7	46·9	71·1	70·9	59·9
Allipore and Ballygunge ...	898	61·6	47·5	66·0	49·7	48·7	66·5	82·3	94·6	87·9	71·1	87·8	83·3	70·2	
Dum-Dum ...	204	69·2	101·8	66·9	53·1	43·1	76·9	42·7	43·1	60·3	43·5	34·9	20·5	53·9	
Barrackpore ...	707	30·7	48·2	88·2	95·8	92·3	79·4	64·9	77·6	85·0	105·9	91·6	83·1	82·0	
Berhampore ..	110	72·7	36·4	37·0	37·7	19·0	28·6	34·8	34·8	34·8	62·5	63·1	45·0	45·5	
Dacca ...	208	64·1	57·7	51·8	63·5	77·7	61·2	76·4	56·7	39·1	55·7	63·3	50·3	60·4	
Cachar and out-posts ...	543	177·7	195·4	213·8	200·3	71·1	44·8	51·6	46·7	51·7	56·6	56·4	26·5	106·8	
Sylhet (9 months) ..	114	...	...	...	57·1	47·6	57·1	47·6	57·1	38·1	38·2	53·4	30·6	43·9	
Shillong and out-posts ..	604	31·4	31·6	68·7	75·3	37·2	40·8	47·7	42·6	39·8	23·1	55·0	38·9	41·7	
Gowhatty ...	417	40·5	67·6	69·0	43·0	44·6	56·9	62·6	65·6	80·6	72·9	70·4	59·6	62·4	
Tezpore ...	151	69·3	59·4	49·5	60·6	86·0	78·8	72·7	75·9	86·4	104·9	69·8	74·3	72·8	
Nowgong ..	82	23·5	47·6	23·8	47·6	27·0	13·9	53·3	47·1	35·3	34·9	47·1	11·8	36·6	
Debrooghur ...	689	34·2	25·1	26·9	37·2	57·3	51·6	41·0	41·8	51·0	49·2	39·4	27·8	40·6	
Buxa ...	611	87·3	36·2	41·7	41·4	45·0	51·6	33·3	27·9	26·8	30·1	28·5	37·6	36·0	
Julpigoree (10 months) ...	352	..	...	18·4	36·4	32·7	41·9	34·1	25·1	34·7	27·6	40·0	42·8	34·1	
Bhaugulpore ...	388	29·4	36·4	28·2	31·6	37·8	38·0	37·0	36·4	32·5	38·8	25·6	24·5	33·5	
Dinapore ...	487	45·8	31·1	18·5	85·6	35·2	11·6	18·8	38·1	34·8	24·8	15·9	17·2	28·7	37·1
Segowlie ...	291	11·3	11·4	12·5	15·4	17·5	11·4	17·9	14·6	18·7	13·5	14·0	0·7	13·7	
Benares ...	559	44·4	50·7	36·2	27·9	28·2	41·2	42·4	40·1	94·1	48·9	58·1	55·2	48·3	
Chunar ...	70	14·3	...	...	...	14·3	14·3	14·3	57·1	57·1	28·6	42·9	14·3	28·6	
Goruckpore ...	651	65·7	54·7	48·6	38·2	35·4	52·4	40·6	45·1	57·0	122·7	52·3	57·1	55·3	
Fyzabad ...	688	25·6	24·8	13·3	17·1	19·8	18·2	11·4	24·8	50·7	72·7	35·9	26·0	29·1	
Lucknow ..	1,084	27·4	27·0	22·8	23·5	27·8	35·9	40·3	63·0	45·7	57·0	70·2	63·4	39·7	
Seetapore (9 months) ...	210	..	...	...	65·1	35·6	38·6	21·5	47·0	29·8	27·6	28·6	41·4	33·3	
Futtehghur ...	176	74·3	86·2	40·0	28·4	39·6	45·7	51·1	51·1	39·8	34·1	51·1	51·1	51·1	
Cawnpore ...	788	34·5	28·8	33·8	36·9	23·8	22·9	26·2	34·6	42·6	51·8	44·6	31·3	33·9	
Allahabad ...	922	27·6	28·0	21·9	31·5	18·5	16·6	16·1	34·3	77·6	52·7	40·3	36·4	33·6	
Nagode (9 months) .	103	...	...	...	10·2	30·6	18·2	30·0	70·7	62·5	69·0	53·6	43·5	38·8	
Shahjehanpore ...	270	15·5	25·9	27·0	23·9	23·7	24·2	28·5	24·8	16·9	21·3	30·3	26·6	25·9	33·6
Bareilly ..	895	33·9	46·8	32·1	36·0	39·4	36·3	28·0	26·8	33·1	34·8	31·7	16·6	32·4	
Moradabad ..	400	11·7	20·5	34·6	32·8	31·1	38·6	40·3	41·0	44·5	49·8	35·4	14·2	32·5	
Almorah ..	538	...	...	31·9	25·4	26·9	44·4	34·8	40·4	40·8	51·9	41·0	47·9	35·3	
Deyrah ...	435	35·4	40·6	36·4	64·6	71·7	50·0	33·7	50·6	40·3	37·0	40·9	57·1	48·3	
Roorkee (11 months) ...	656	...	13·7	22·1	25·9	30·9	20·9	21·7	31·4	31·6	17·5	19·6	16·7	24·4	
Meerut ...	848	59·4	29·5	16·7	19·3	16·9	14·0	18·5	44·3	101·9	46·6	32·6	82·4	34·3	
Delhi ...	656	21·7	33·4	35·1	18·8	29·5	25·0	24·1	45·2	90·7	51·6	23·1	16·4	35·1	
Agra .	932	72·6	52·3	45·5	32·4	30·9	37·2	32·7	51·1	225·3	109·8	57·4	125·6	70·8	56·2
Morar ..	1,547	95·5	61·2	47·8	36·3	42·0	38·4	36·8	42·8	59·2	69·0	78·0	54·5	54·0	
Jhansi ...	655	36·5	35·1	18·3	19·6	10·2	17·2	18·4	24·3	71·5	68·4	74·6	65·3	39·7	
Nowgong ..	290	46·2	46·2	43·2	38·8	21·5	24·2	43·0	74·5	90·9	97·9	104·2	66·2	55·2	
Seepree, Sambhur and Ulwar ..	151	44·8	14·9	12·9	13·[illegible]	13·2	19·7	33·1	46·4	39·7	59·2	30·9	49·4	33·1	
Lullutpore ..	70	46·2	61·5	15·4	41·1	27·4	27·4	41·1	71·4	57·1	55·6	41·7	27·8	42·9	
Deolee ...	199	49·2	59·5	52·4	58·1	96·4	79·3	74·7	61·1	106·2	137·4	66·1	61·4	75·1	
Umballa ...	863	28·3	29·4	21·1	23·9	31·8	30·0	25·3	62·0	101·2	75·3	42·1	24·0	41·7	39·2
Simla (6 months) .	164	...	...	...	.	41·9	47·9	41·9	42·2	60·6	46·7	..	...	48·8	
Loodianah ...	120	...	9·8	9·3	16·8	27·9	44·7	40·8	107·5	231·0	231·6	74·1	9·3	58·3	
Phillour (10 months) .	38	...	...	...	...	...	...	..	..	..	...	...	...	...	
Jullundur .	490	142·9	42·6	38·1	34·8	30·1	24·5	23·6	28·7	64·9	82·4	77·5	68·5	51·0	
Ferozepore ..	634	14·2	15·2	12·8	22·1	19·1	17·0	30·1	45·0	43·5	30·9	28·1	17·6	23·7	
Mooltan ...	957	23·7	21·7	13·9	17·7	22·6	31·2	39·5	70·6	97·7	134·5	159·9	107·2	59·6	
Sealkote ..	907	18·4	16·9	28·7	31·1	29·8	27·4	28·8	35·1	51·9	38·1	35·0	40·4	33·1	
Dhurmsalla .	500	51·6	52·9	69·0	41·3	48·4	51·8	48·6	33·3	44·4	37·0	37·0	32·0	42·0	
Bukloh .	444	29·1	25·6	31·2	76·8	69·9	51·0	38·8	39·1	41·7	22·7	24·5	31·2	42·8	
Umritsur ..	267	56·9	36·1	17·7	22·6	27·9	24·0	19·2	50·0	129·8	95·8	68·8	47·8	48·7	
Meean Meer ..	1,261	28·0	30·7	27·0	20·9	22·0	8·1	13·7	27·6	48·4	89·1	92·9	55·5	37·3	
Jhelum ...	1,304	19·3	27·8	27·1	25·7	50·9	34·2	40·5	40·3	65·1	90·5	89·4	42·2	49·1	
Rawulpindee ...	1,866	37·2	30·5	26·5	45·6	44·5	35·6	35·6	41·6	40·9	37·6	40·2	33·6	37·5	
Tallagunge ..	560	30·5	20·2	14·6	9·8	20·6	19·9	27·1	28·9	48·7	52·0	43·5	23·3	28·6	
Attock ...	174	39·1	28·7	40·7	11·5	12·9	28·2	16·9	19·2	26·9	118·3	113·6	125·0	51·7	
Huzara (7 months) ...	461	...	..	...	6·7	20·3	31·5	30·0	32·8	40·8	26·1	..	..	26·0	
Murree ...	78	20·8	...	41·7	20·0	20·0	20·0	10·0	20·0	30·0	20·3	83·3	41·7	25·6	
Nowshera ...	809	50·5	49·0	43·8	20·6	18·5	27·5	41·1	50·5	82·1	98·8	95·5	49·1	51·9	
Cherat (8 months) ...	110	...	...	...	90·9	59·5	47·6	60·2	42·3	29·3	30·0	10·0	..	36·4	
Peshawur .	3,084	42·6	31·3	23·0	21·2	20·0	19·0	21·4	24·6	48·1	53·7	55·7	36·9	33·4	
„ out-posts ..	471	4·3	4·3	2·1	4·3	2·1	6·4	12·9	34·4	32·5	77·9	25·9	12·7	19·1	
PUNJAB FRONTIER FORCE.															
Murdan ...	853	37·7	36·8	35·3	15·0	19·3	21·6	33·1	32·4	66·8	83·2	71·4	53·7	43·4	52·5
Abbottabad ...	1,365	50·6	57·6	37·6	27·7	36·7	38·8	42·1	47·1	39·8	37·0	38·1	40·2	41·8	
Kohat and out-posts ..	2,309	57·6	60·6	42·0	27·1	33·1	36·9	41·2	62·1	99·9	84·0	61·8	54·6	54·6	
Bunnoo and out-posts ..	1,734	59·1	53·9	44·9	28·4	32·2	36·0	38·5	42·6	54·5	98·9	107·8	100·4	58·8	
Dera Ghazee Khan and out posts ..	1,517	70·6	75·7	47·5	36·2	31·6	34·1	46·6	69·1	97·3	85·7	70·3	57·9	59·3	
Dera Ismael Khan and out-posts ..	1,696	37·5	25·4	23·5	27·7	36·5	31·3	26·3	43·3	70·5	92·3	77·9	58·2	46·0	
Rajanpore and out-posts .	547	56·9	59·8	53·1	41·7	40·7	49·7	55·1	49·3	58·6	125·9	134·2	65·9	65·8	
CENTRAL INDIA FORCE.															
Augar ...	295	11·4	17·1	9·8	8·3	15·7	18·2	10·3	10·3	10·0	10·4	15·6	12·2	13·0	38·3
Goonah ..	334	19·1	18·3	10·8	10·4	19·1	21·6	19·9	18·2	31·9	44·4	24·5	26·0	21·0	
Sirdarpore ...	404	25·4	24·3	24·5	39·3	43·5	35·8	35·2	39·8	44·4	54·8	44·9	32·3	37·1	
Kherwarrah .	500	29·0	36·2	31·2	26·3	16·9	32·9	33·3	41·1	50·4	76·5	63·5	51·0	44·0	
Erinpoorah ...	748	19·2	17·0	20·3	25·8	23·6	20·1	21·0	16·4	22·3	40·2	48·3	28·0	25·4	
Deolee ..	756	44·6	60·7	50·0	46·1	43·4	40·4	57·9	69·0	75·7	74·3	61·2	38·8	55·6	
Sehore ...	806	34·0	24·4	26·5	36·2	41·6	24·3	41·8	55·8	48·3	47·4	41·3	30·0	37·2	
Ajmere ...	601	65·6	53·3	43·9	41·3	40·2	44·8	42·3	37·0	54·6	71·7	67·4	60·7	51·6	

NATIVE TROOPS, 1872.

XII.

TABLE showing the RATIO in which the CHIEF DISEASES have contributed to make up the ADMISSION-RATE of each STATION.

STATIONS.	Average Strength during the period of observation.	Admitted into Hospital per 1,000 of Average Strength. Dengue.	Cholera.	Fevers.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Ophthalmia.	Rheumatism.	Venereal Diseases.	Diseases of the Respiratory Organs.	All other Causes.	Admitted per 1,000 of Strength during the period of observation.
Fort William ...	564	718·1	5·3	351·0	150·7	102·8	1·8	16·0	10·5	53·2	62·1	108·2	326·2	1014·9
Alipore and Ballygunge ...	808	736·1	1·1	678·2	289·5	183·7	3·3	80·1	21·2	79·1	17·8	72·4	631·4	2743·9
Dum-Dum ...	204	509·8	...	514·1	200·0	191·2	4·9	9·8	19·6	83·3	29·4	112·8	382·4	2180·3
Barrackpore ...	707	479.5	7·1	916·5	118·8	135·8	4·2	29·3	9·9	83·5	24·0	84·9	415·8	2308·3
Berhampore ...	110	572·7	...	654·5	127·3	81·8	...	...	...	72·7	36·4	136·4	327·3	2009·1
Dacca ...	298	234·9	6·7	741·6	291·9	151·0	6·7	...	3·4	63·8	16·8	94·0	359·0	1969·8
Cachar and out-posts ...	543	...	14·7	707·4	268·0	97·6	...	22·1	47·9	110·5	14·7	81·0	375·7	1830·5
Sylhet (9 months) ...	114	17·5	...	508·8	79·0	17·5	8·8	...	17·5	114·0	35·1	35·1	110·4	973·7
Shillong and out-posts ...	604	...	5·0	433·8	74·5	72·8	8·3	18·2	24·8	62·9	46·4	41·4	362·6	1150·7
Gowhatty ...	417	16·8	14·4	750·6	93·5	60·0	2·4	36·0	38·3	48·0	50·3	71·9	635·5	1817·7
Tezpore ...	151	13·2	19·9	847·7	99·3	112·6	13·2	79·5	46·4	132·5	66·2	218·5	900·7	2549·7
Nowgong ...	82	12·2	...	792·7	85·4	36·6	...	...	...	134·1	48·8	36·6	268·3	1414·7
Debrooghur ..	689	...	5·8	660·4	108·9	116·1	...	10·2	16·0	60·9	2·9	65·3	484·7	1531·2
Buxa ...	611	...	...	342·1	94·9	94·9	1·6	1·6	4·9	27·8	8·2	104·8	365·0	1045·8
Julpigoree (10 months) ...	352	...	8·5	648·3	122·2	127·9	...	...	17·0	17·0	5·7	14·2	210·2	1071·0
Bhaugulpore ...	388	5·1	2·6	247·4	33·5	23·2	2·6	...	12·9	49·0	30·9	33·5	443·3	884·0
Dinapore ...	487	84·2	4·1	209·8	76·0	30·8	2·1	2·1	4·1	24·6	10·3	43·1	279·2	860·4
Segowlie ...	291	...	...	58·4	27·5	10·3	...	...	6·9	13·7	10·3	10·3	85·9	223·3
Benares ...	559	801·4	1·8	357·8	68·0	23·3	1,8	8·9	14·3	42·9	51·9	46·5	352·4	1771·0
Chunar ...	70	...	28·6	771·4	142·8	71·4	...	...	...	100·0	42·9	42·9	214·3	1414·3
Goruckpore ...	651	6·1	...	963·1	87·5	15·4	3·1	15·4	50·7	49·1	76·8	36·9	361·0	1665·1
Fyzabad ...	688	334·3	...	386·6	93·0	2·9	2·9	7·3	27·6	30·3	32·0	8·7	177·3	1111·9
Lucknow ...	1,084	241·7	7·4	559·1	46·1	24·0	·9	2·8	39·7	99·6	20·3	46·1	333·9	1421·6
Seetapore (9 months) ...	210	4·8	...	228·6	38·1	19·0	...	4·8	61·9	38·1	33·3	14·3	200·0	642·9
Futtehghur ...	176	...	...	636·4	68·2	73·9	17·0	11·4	79·5	153·4	34·1	90·9	488·6	1653·4
Cawnpore ...	738	5·4	1·4	556·9	54·2	58·3	1·4	...	33·9	47·4	9·5	29·8	378·0	1170·2
Allahabad ...	922	654·0	7·6	250·5	54·2	18·5	...	1·1	27·1	34·7	15·2	46·6	231·0	1340·5
Nagode (9 months) ...	103	...	...	407·8	19·4	...	9·7	...	9·7	68·0	48·5	9·7	301·0	873·8
Shahjehanpore ...	270	...	18·5	229·6	51·9	7·4	7·4	3·8	7·4	22·2	25·9	51·9	248·1	674·1
Bareilly ...	895	...	1·1	296·1	14·5	10·1	...	5·6	33·5	23·5	8·9	42·4	350·8	795·5
Moradabad ...	400	...	...	257·5	30·0	7·5	2·5	12·5	12·5	40·0	20·0	57·5	242·5	682·5
Almorah ...	538	...	...	256·5	24·2	11·2	...	...	29·7	44·6	139·4	37·2	146·8	689·6
Deyrah ...	435	...	23·0	317·2	16·1	66·7	23·0	108·0	75·9	50·6	64·4	25·3	262·0	1032·2
Roorkee (11 months) ...	656	...	6·1	282·0	15·3	19·8	1·5	6·1	18·3	27·4	39·6	25·9	323·2	765·2
Meerut ...	846	27·2	2·4	909·0	46·1	22·5	...	0·4	17·7	18·9	18·9	48·5	178·5	1299·1
Delhi ...	656	202·7	...	701·2	68·6	35·1	...	7·6	10·7	36·6	41·1	18·3	192·1	1404·0
Agra ...	932	1199·6	...	676·0	46·1	41·8	2·1	6·4	27·9	124·5	36·5	65·4	525·8	2752·1
Morar ...	1,547	...	...	1150·0	58·8	16·1	2·6	13·6	33·6	44·6	73·7	67·9	330·3	1791·2
Jhansi ...	655	...	...	636·6	41·2	7·6	4·6	19·8	21·4	50·4	55·0	73·3	410·7	1320·6
Nowgong ...	290	...	...	531·0	34·5	13·8	...	34·5	24·1	75·9	17·2	44·8	775·9	1551·7
Seepree, Sambhur, and Ulwar ...	151	...	...	662·3	13·2	26·5	13·2	6·6	13·2	72·9	26·5	19·9	331·1	1185·4
Lullutpore ...	70	...	...	985·7	42·9	28·6	...	...	14·3	100·0	71·4	57·1	314·3	1614·3
Deolee ...	199	...	...	824·1	35·2	5·0	5·0	5·0	35·2	120·6	40·2	105·5	547·8	1723·6
Umballa ...	863	...	1·2	1329·1	47·5	22·0	...	2·3	71·9	69·5	17·4	30·1	292·0	1883·0
Simla (6 months) ...	164	...	...	347·5	42·7	18·3	...	...	30·5	12·2	30·5	61·0	176·8	719·5
Loodianah ...	120	8·3	...	1641·7	25·0	...	...	...	25·0	58·3	50·0	16·7	166·7	1991·7
Phillour (10 months) ...	38	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ...	490	8·2	2·0	834·7	59·2	28·6	2·0	18·4	36·7	114·3	16·3	46·9	304·1	1471·4
Ferozepore ...	634	...	...	302·8	34·7	15·8	3·2	26·8	55·2	63·1	28·4	48·9	200·3	779·2
Mooltan ...	957	...	...	1338·5	54·3	27·2	2·1	6·3	46·0	17·8	11·5	38·7	315·5	1857·9
Sealkote ...	907	...	...	410·1	30·9	28·7	1·1	...	32·0	62·8	14·3	45·2	385·9	1011·0
Dhurmsalla ...	500	...	...	574·0	20·0	30·0	...	...	54·0	84·0	30·0	18·0	328·0	1138·0
Bukloh ...	444	...	...	488·7	29·3	22·5	...	11·3	27·0	83·3	47·3	74·3	533·8	1317·5
Umritsur ...	267	...	...	1801·5	71·2	18·7	...	11·2	...	37·5	44·9	52·4	265·9	2303·3
Meean Meer ...	1,261	...	19·8	1581·3	70·6	32·5	2·4	4·0	22·2	69·8	17·4	50·8	324·3	2195·1
Jhelum ...	1,304	...	4·6	919·5	122·7	55·2	1·5	7·7	32·2	61·4	19·9	69·0	460·9	1754·6
Rawulpindee ...	1,866	...	·5	182·7	23.1	8·6	2·7	11·8	27·3	42·5	24·7	48·2	208·5	580·4
Tallagunge ...	560	...	...	494·6	53·6	55·3	...	23·2	17·9	50·0	17·9	46·4	453·6	1212·5
Attock ...	174	...	...	1258·6	40·2	5·8	5·8	17·2	5·8	57·5	17·2	34·5	149·4	1592·0
Huzara (7 months) ...	461	...	...	169·2	41·2	19·5	...	2·2	6·5	32·5	13·0	13·0	143·2	440·3
Murree ...	78	...	...	192·3	64·1	76·9	...	...	12·8	...	76·9	102·6	307·7	833·3
Nowshera ...	809	...	...	990·1	58·1	9·9	2·5	4·9	32·1	24·7	21·0	28·4	244·8	1416·5
Cherat (8 months) ...	110	...	...	190·9	145·4	127·3	...	...	27·3	81·8	9·1	27·3	163·6	772·7
Peshawur ...	3,084	...	14·3	987·3	91·8	64·5	1·0	18·8	28·8	47·7	23·7	66·5	274·6	1619·0
" out-posts ...	471	...	2·1	1116·8	53·1	29·7	...	2·1	14·9	10·6	8·5	10·6	63·7	1312·1
Punjab Frontier Force.														
Murdan ..	853	...	·4	579·1	5·9	70.3	...	7·0	50·4	60·2	32·8	52·8	467·8	1335·3
Abbottabad ...	1,365	...	·7	516·5	13·2	60·1	4·4	10·0	37·4	93·0	28·6	114·3	433·0	1320·2
Kohat and out-posts ...	2,309	...	39·4	1277·6	117·8	152·4	3·5	17·8	16·0	87·9	16·9	123·9	373·3	[illegible]
Bunnoo and out-posts ...	1,734	...	...	1328·1	114·8	64·0	·6	28·8	26·5	61·1	16·7	43·3	456·8	[illegible]
Dera Ghazee Khan and out-posts ..	1,517	...	...	1270·9	92·3	33·0	1·3	15·2	24·4	60·0	11·9	65·2	491·1	2065·3
Dera Ismael Khan and out-posts ...	1,696	...	·6	1201·6	125·0	37·1	2·4	30·7	25·9	56·6	21·8	46·6	352·6	1900·9
Rajanpore and out-posts ...	547	...	...	990·9	38·4	9·1	3·7	12·8	20·1	67·6	9·1	34·7	440·6	[illegible]
Central India Force.														
Augur ...	295	...	...	118·6	57·6	6·8	...	...	13·6	13·6	3·4	10·2	94·9	318·7
Goonah ...	334	...	3·0	278·4	47·9	15·0	3·0	18·0	30·0	26·9	26·9	18·0	95·8	562·9
Sirdarpore ...	404	...	...	542·1	22·3	42·1	...	9·9	64·4	30·6	17·3	56·9	370·3	1170·8
Kherwarrah ...	500	...	...	812·0	24·0	42·0	4·0	6·0	58·0	44·0	14·0	14·0	590·0	1608·0
Erinpoorah ...	748	...	...	506·7	10·7	6·7	...	2·7	58·8	28·1	22·7	38·8	161·7	836·9
Deolee ...	756	...	..	392·9	10·6	11·9	...	6·6	68·8	38·4	37·0	128·3	374·3	1068·8
Sehore ...	806	...	8·7	670·0	119·1	135·2	3·7	6·2	40·9	59·6	26·1	23·6	165·0	1258·1
Ajmere ...	601	...	...	525·8	33·3	21·6	3·3	18·3	71·5	124·8	38·3	81·5	406·0	1324·4

NATIVE TROOPS, 1872.

XIII.

TABLE showing the MORTALITY in each STATION, the CAUSES of DEATHS, and the RATIO of DEATHS to STRENGTH.

STATIONS.	Average Strength for the period of observation.	CAUSES OF DEATHS IN REGIMENTAL HOSPITALS.																		Died out of Hospital.	TOTAL DEATHS.		DIED PER 1,000 OF AVERAGE STRENGTH.			
																					A.	B.	A. With their Regiments.			B.
		Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent and Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		Of men present with their Regiments.	Of men absent from their Regiments.	a. Cholera.	b. All other Causes.	c. All Causes.	All Deaths, absent and present.
Troops marching in Bengal and N.-W. Provinces ...	...	5	...	...	...	...	...	1	2	...	...	2	...	...	...	...	...	1	...	2	13	...	...	...	...	...
Delhi Camp, January 1872 ...	...	...	...	...	4	2	...	2	2	...	...	14	...	...	...	...	...	...	...	...	24	...	...	...	...	...
Loshaie Field Force ...	...	86	...	...	1	2	...	12	3	1	...	2	...	...	...	...	...	2	...	6	115	...	...	...	...	...
Fort William ...	564	2	...	1	...	1	...	1	...	...	1	1	...	3	...	1	...	...	...	1	12	...	3·55	17·73	21·28	...
Allipore ...	898	1	...	3	3	...	...	5	1	...	...	...	...	...	...	...	1	...	1	...	15	...	1·11	15·59	16·70	...
Dum-Dum ...	204	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	4·90	4·90	...
Barrackpore ...	707	1	...	...	1	2	1	1	...	...	...	1	...	3	...	2	3	...	...	2	17	...	1·41	22·64	24·05	...
Berhampore ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dacca ...	298	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	3	...	3·36	6·71	10·07	...
Cachar and out-posts ...	543	5	...	...	1	3	...	1	...	...	...	1	...	...	...	2	1	...	...	...	14	...	9·21	16·57	25·78	...
Sylhet (9 months) ...	114	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	8·77	8·77	...
Shillong and out-posts ...	604	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	4	...	3·31	3·31	6·62	...
Gowhatty ...	417	3	...	...	...	1	...	1	1	...	...	1	...	1	...	...	1	...	3	2	14	...	7·20	26·37	33·57	...
Tezpore ...	151	...	...	...	...	...	...	...	1	...	...	1	...	1	1	...	...	...	...	...	4	...	...	26·49	26·49	...
Nowgong ...	82	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Debrooghur ...	689	2	...	...	1	...	...	...	1	...	...	1	...	2	...	...	...	...	...	3	10	...	2·90	11·61	14·51	...
Buxa ...	611	...	...	...	...	...	...	2	1	...	...	2	...	...	...	1	...	...	...	...	6	...	...	9·82	9·82	...
Julpigoree (10 months) ...	352	1	...	...	1	1	...	2	...	...	...	1	...	...	...	...	1	...	...	1	8	...	2·84	19·89	22·73	...
Bhaugulpore ...	388	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	6,660	18	...	4	8	9	1	14	5	...	1	10	...	10	1	6	8	...	4	10	109	134*	2·70	13·66	16·36	29·81
Dinapore ...	487	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	4	...	4·10	4·10	8·21	...
Segowlie ...	291	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	...	3	...	...	10·31	10·31	...
Benares ...	559	1	...	...	...	...	...	2	...	...	1	1	...	1	...	...	1	...	...	...	7	...	1·79	10·73	12·52	...
Chunar ...	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goruckpore ...	651	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	3·07	3·07	...
Fyzabad ...	688	...	...	...	1	1	...	...	...	1	...	2	...	1	...	...	...	...	...	1	7	...	...	10·17	10·17	...
Lucknow ...	1,084	6	1	...	...	1	...	...	...	...	1	3	1	2	...	...	...	...	...	...	15	...	5·53	8·31	13·84	...
Seetapore (9 months) ...	210	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur ...	176	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	5·68	5·68	...
Cawnpore ...	738	1	...	...	1	1	...	...	...	...	...	3	...	1	...	...	...	1	1	1	10	...	1·36	12·19	13·55	...
Allahabad ...	922	4	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	6	...	4·34	2·17	6·51	...
Nagode (9 months) ...	103	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	5,900	14	1	...	2	3	...	3	...	2	3	11	1	5	...	...	2	3	3	2	55	59‡	2·37	6·96	9·33	16·00
Shahjehanpore ...	270	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	6	...	11·11	11·11	22·22	...
Bareilly ...	895	...	...	...	...	3	2	...	...	...	1	2	...	...	...	...	3	...	2	1	14	...	[illegible]	15·64	15·64	...
Moradabad ...	400	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	4	...	...	10·00	10·00	...
Almorah ...	538	...	...	...	1	...	...	...	...	...	...	3	...	2	...	...	...	...	...	1	7	...	...	13·03	13·03	...
Deyrah ...	435	10	...	...	...	...	...	...	2	1	...	1	1	1	...	...	...	...	3	...	19	...	22·99	20·69	43·68	...
Roorkee (11 months) ...	656	2	1	...	...	1	...	...	...	...	...	3	...	2	...	...	...	...	...	...	9	...	3·05	10·67	13·72	...
Meerut ...	846	...	...	...	1	1	...	1	...	...	...	5	1	3	...	...	2	...	...	...	14	...	...	16·55	16·55	...
Delhi ...	656	...	...	...	2	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	5	...	...	7·62	7·62	...
	4,643	15	1	...	6	[illegible]	2	2	2	1	1	15	2	10	...	...	6	1	7	2	78	79‡	3·23	13·57	16·80	24·86
Agra ...	932	...	...	...	1	...	...	...	1	1	...	1	...	2	...	...	...	1	1	1	9	...	...	9·66	9·66	...
Morar ...	1,547	...	...	...	4	...	...	...	...	...	...	7	...	1	...	...	...	...	2	2	16	...	...	10·34	10·34	...
Jhansi ...	655	...	...	...	1	...	...	...	...	...	1	7	...	...	...	...	1	...	1	...	11	...	...	16·79	16·79	...
Nowgong ...	290	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	2	...	...	6·90	6·90	...
Seepree, Sambhur and Ulwar	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	6·62	6·62	...
Lullutpore ...	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolee ...	199	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	10·05	10·05	...
	3,844	...	...	...	7	...	...	...	1	1	1	17	...	3	...	...	1	1	5	4	41	30‡	...	10·67	10·67	14·56
Umballa ...	863	...	...	...	5	...	...	...	1	...	...	3	...	1	...	...	...	...	...	...	10	...	...	11·59	11·59	...
Simla (6 months) ...	164	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	6·10	6·10	...
Loodianah ...	120	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Phillour (10 months) ...	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur ...	490	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2·04	2·04	4·08	...
Ferozepore ...	634	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	3	...	...	4·73	4·73	...
Mooltan ...	957	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	4	...	...	4·18	4·18	...
Sealkote ...	907	...	...	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	3	...	6	...	...	6·61	6·61	...
Dhurmsalla ...	500	...	1	...	...	2	...	...	...	...	...	2	...	4	...	...	1	...	1	...	11	...	...	22·00	22·00	...
Bukloh ...	444	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2	4	...	...	9·01	9·01	...
Umritsur ...	267	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	2	...	...	7·49	7·49	...
Meean Meer ...	1,261	12	...	...	2	...	...	1	2	...	...	2	...	1	...	...	...	...	1	3	24	...	9·52	9·52	19·04	...
Jhelum ...	1,304	2	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	2	2	8	...	1·54	4·60	6·14	...
Rawulpindee ...	866	...	...	...	...	2	...	1	2	...	1	5	...	...	...	...	2	...	4	...	17	...	...	9·11	9·11	...
[illegible]lagunge ...	560	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	1·78	1·78	...
Attock ...	174	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	3	...	...	17·24	17·24	...
Huzara (7 months) ...	461	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree ...	78	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	25·64	25·64	...
Nowshera ...	809	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	1	3	...	...	3·71	3·71	...
Cherat (8 months) ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur ...	3,084	28	...	...	5	8	1	8	7	...	2	21	...	2	...	1	5	2	5	3	98	...	9·08	22·70	31·78	...
" out-posts ...	471	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2·12	2·12	4·24	...
Troops on march, Punjab ...	...	...	...	...	1	2	...	...	1	...	1	5	...	...	...	...	...	...	1	...	11	...	...	...	...	...
	15,712	44	1	...	16	16	1	12	14	...	5	50	...	9	...	1	9	2	20	12	212	95‡	2·80	10·69	13·49	17·01
Army of the Presidency ...	39,179	182	3	4	44	37	4	46	29	5	11	121	3	37	1	7	26	10	39	38	647†	247	4·64	11·87	16·51	20·08
Central India Force ...	4,444	4	...	...	4	4	1	6	3	...	1	22	...	1	...	...	...	...	8	2	56	20	·90	11·71	12·61	13·55
Punjab Frontier Force ...	10,022	61	2	2	7	34	6	15	5	1	2	55	...	4	...	...	2	3	10	3	212†	75	6·18	14·98	21·16	23·47

---

* See Note to Table 11.

† This total includes two deaths of men of the Peshawur Mountain Train Battery, which went on field service with the Loshaie Force. In the Regimental Table these deaths are incorporated with the mortality of the Frontier Force, where the deaths of the Regular Army are given as 645, and those of the Frontier Force as 214.

‡ Besides men absent from their regiments, these totals include the men who died on the march, at the Delhi Camp, and with the Loshaie Field Force.

NATIVE TROOPS, 1872.

XIV.

TABLE showing the PREVALENCE of CHOLERA in each MONTH and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength during the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength for each Province.	Total Deaths of the Year.	Death-rate per 1,000 of Strength for each Province.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Troops marching in Bengal and North-Western Provinces ...	...	...	...	...	2	4	2	...	...	...	...	...	1	9		5	...
Delhi Camp ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	...
Loshaie Field Force ...	...	2	4	97	2	...	...	...	...	...	...	...	...	105		86	...
Fort William ...	564	...	...	...	3	...	...	...	...	...	...	...	...	3	5·9	2	2·70
Allipore ...	898	...	...	...	...	...	1	...	...	...	...	...	...	1		1	
Dum-Dum ...	204	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Barrackpore ...	707	...	...	...	...	...	...	2	...	...	2	1	...	5		1	
Berhampore ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dacca ...	298	...	...	...	...	...	...	...	...	...	...	...	2	2		1	
Cachar and out-posts ...	543	...	...	6	2	...	...	...	...	...	...	...	...	8		5	
Sylhet (9 months) ...	114	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Shillong and out-posts ...	604	1	...	1	...	...	...	1	...	...	...	...	...	3		2	
Gowhatty ...	417	...	...	...	...	6	...	...	...	...	...	...	...	6		3	
Tezpore ...	151	...	...	...	...	...	2	1	...	...	...	...	...	3		...	
Nowgong ...	82	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Debroogurh ...	689	...	...	...	...	1	1	...	...	...	2	...	...	4		2	
Buxa ...	611	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Julpigoree (10 months) ...	352	...	...	...	...	1	...	...	2	...	...	...	...	3		1	
Bhaugulpore ...	388	...	...	...	...	...	...	...	1	...	...	...	...	1		...	
Dinapore ...	487	...	...	...	...	1	...	...	...	1	...	...	...	2	3·6	2	2·37
Segowlie ...	291	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Benares ...	559	...	...	...	...	...	...	...	...	...	...	...	1	1		1	
Chunar ...	70	...	...	...	...	...	1	...	1	...	...	...	...	2		...	
Goruckpore ...	651	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Fyzabad ...	688	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Lucknow ...	1,084	...	...	...	1	2	...	2	2	1	...	...	...	8		6	
Seetapore (9 months) ...	210	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Futtehghur ...	176	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Cawnpore ...	738	...	...	...	...	...	1	...	...	...	...	...	...	1		1	
Allahabad ...	922	...	...	...	...	4	...	...	3	...	...	...	...	7		4	
Nagode (9 months) ...	103	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Shahjehanpore ...	270	...	...	...	...	...	...	...	5	...	...	...	...	5	4·7	3	3·23
Bareilly ...	895	...	...	...	...	...	...	...	1	...	...	...	...	1		...	
Moradabad ...	400	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Almorah ...	538	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Deyrah ...	435	...	...	...	...	...	...	1	8	...	...	1	...	10		10	
Roorkee (11 months) ...	656	...	...	...	...	...	...	...	...	4	...	...	...	4		2	
Meerut ...	846	...	...	...	...	...	...	...	1	1	...	...	...	2		...	
Delhi ...	656	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Agra ...	932	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Morar ...	1,547	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Jhansi ...	655	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Nowgong ...	290	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Seepree, Sambhur and Ulwar ...	151	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Lullutpore ...	70	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Deolee ...	109	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Umballa ...	863	...	...	...	...	...	...	...	...	1	...	...	...	1	5·1	...	2·80
Simla (6 months) ...	164	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Loodianah ...	120	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Phillour (10 months) ...	38	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Jullundur ...	400	...	...	...	...	...	...	...	1	...	...	...	...	1		1	
Ferozepore ...	634	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Mooltan ...	957	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Sealkote ...	907	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dhurmsalla ...	500	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Bukloh ...	444	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Umritsur ...	267	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Meean Meer ...	1,261	...	...	...	...	...	...	...	19	6	...	...	...	25		12	
Jhelum ...	1,304	...	...	...	1	...	...	2	3	...	...	...	...	6		2	
Rawulpindee ...	1,866	...	...	...	...	...	...	...	1	...	...	...	...	1		...	
Tallagunge ...	560	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Attock ...	174	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Huzara (7 months) ...	461	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Murree ...	78	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Nowshera ...	800	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Cherat (8 months) ...	110	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Peshawur ...	3,084	...	...	...	...	...	...	...	...	...	43	1	...	44		28	
„ out-posts ...	471	...	...	...	...	...	...	...	...	...	1	...	...	1		1	
Troops on march, Punjab ...	...	...	...	...	1	...	...	...	...	...	...	...	...	1		...	
TOTAL ...	30,170	3	4	104	12	19	8	9	48	14	48	3	4	276	7·0	182	4·64
Murdan ...	853	...	...	...	...	...	...	...	...	...	...	...	...	...	9·3	...	6·18
Abbottabad ...	1,365	...	...	...	...	...	1	...	...	...	...	...	...	1		1	
Kohat ...	2,309	...	...	...	...	...	...	...	44	46	1	...	...	91		59	
Bunnoo ...	1,734	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dera Ghazee Khan and out-posts	1,517	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Dera Ismael Khan and out-posts	1,696	...	...	...	...	...	...	...	...	1	...	...	...	1		1	
Rajanpore and out-posts ...	547	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
TOTAL ...	10,022	...	...	...	...	...	1	...	44	47	1	...	...	93	...	61	..
Augur ...	206	...	...	...	...	...	...	...	...	...	...	...	...	...	1·8	...	·90
Goonah ...	334	...	...	...	...	1	...	...	...	...	...	...	...	1		...	
Sirdarpore ...	404	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Kherwarrah ...	500	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Erinpoorah ...	748	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Deolee ...	756	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
Sehore ...	806	...	...	...	...	...	...	7	...	...	...	...	...	7		4	
Ajmere ...	601	...	...	...	...	...	...	...	...	...	...	...	...	...		...	
TOTAL ...	4,444	...	...	...	...	1	...	7	...	...	...	...	...	8	...		...

NATIVE TROOPS, 1872.

XV.

TABLE showing the PREVALENCE of DENGUE in each MONTH and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength during the period of occupation.	Number of Admissions into Hospital in each Month.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Admission-rate per 1,000 of Strength for each Province.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Troops marching in Bengal and North-Western Provinces	...	...	...	...	...	...	...	...	...	...	15	...	...	15	...	...
Delhi Camp	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Loshaie Field Force	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fort William	564	..	...	...	126	123	40	33	42	31	10	...	...	405	718·1	...
Alipore and Ballygunge	898	...	...	...	61	59	97	213	155	35	28	13	...	661	736·1	...
Dum-Dum	204	...	...	...	5	33	39	19	7	...	1	...	...	104	509·8	...
Barrackpore	707	.	...	...	15	203	92	25	4	...	...	...	...	339	479·5	...
Berhampore	110	...	...	...	...	...	3	44	16	...	...	...	...	63	572·7	...
Dacca	298	...	...	...	...	...	...	59	11	...	...	...	...	70	234·9	...
Cachar and out-posts	543	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sylhet (9 months)	114	...	...	...	...	...	...	...	...	...	1	1	...	2	17·5	...
Shillong and out-posts	604	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Gowhatty	417	...	...	...	...	...	2	2	...	...	3	...		7	16·8	...
Tezpore	151	...	...	...	2	...	...	...	...	...	...	...	...	2	13·2	...
Nowgong	82	...	...	...	...	...	...	1	...	...	...	...	...	1	12·2	...
Debrooghur	689	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Buxa	611	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Julpigoree (10 months)	352	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Bhaugulpore	388	...	...	...	...	...	...	...	...	2	...	...	...	2	5·1	...
	6,660	...	...	...	209	418	273	396	235	68	43	14	...	1,650	...	248·6
Dinapore	487	...	...	...	...	...	...	3	19	10	7	2	..	41	84·2	...
Segowlie	291	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Benares	559	...	..	...	...	...	...	...	149	238	59	2	...	448	801·4	...
Chunar	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goruckpore	661	...	...	...	...	2	...	...	...	...	..	2	...	4	6·1	...
Fyzabad	688	...	...	...	...	...	...	...	...	55	148	26	1	230	334·3	...
Lucknow	1,084	...	...	...	...	...	...	...	179	43	27	13	...	262	241·7	...
Seetapore (9 months)	210	...	...	...	...	...	...	...	...	...	...	1	...	1	4·8	...
Futtehghur	176	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cawnpore	738	...	...	..	...	...	...	...	...	2	2	...	...	4	5·4	...
Allahabad	922	...	...	...	...	...	...	...	66	282	206	42	7	603	654·0	..
Nagode (9 months)	103	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
	5,900	...	...	...	..	2	...	3	413	630	449	88	8	1,593	...	270·0
Shahjehanpore	270	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly	895	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Moradabad	400	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Almorah	538	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Deyrah	435	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Roorkee (11 months)	650	...	...	...	...	...	...	...	...	...	...	...	..	..	...	...
Meerut	848	...	...	...	...	...	...	...	...	..	1	17	5	23	27·2	...
Delhi	656	...	...	...	...	...	...	...		125	8	...	...	133	202·7	...
	4,643	...	...	...	...	...	...	...	.	125	9	17	5	156	.	33·6
Agra	932	...	...	...	...	...	...	...	114	811	172	19	2	1,118	1199·6	...
Morar	1,547	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Jhansi	655	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowgong	290	...	...	...	...	...	...	...	...	...	...	...	.	...	...	...
Seepree, Sambhur and Ulwar	151	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lullutpore	70	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolee	109	...	...	...	.	...	...	...	...	...	..	...	...	...	...	...
	3,844	...	...	...	...	...	...	...	114	811	172	19	2	1,118	..	290·8
Umballa	863	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Simla (6 months)	164	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Loodianah	120	...	...	...	...	...	...	...	...	...	1	...	...	1	8·3	...
Phillour (10 months)	38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jullundur	490	...	...	...	...	...	...	...	...	...	1	3	...	4	8·2	...
Ferozepore	634	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
Mooltan	957	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	907	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Dhurmsalla	500	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bukloh	444	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	267	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meean Meer	1,261	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhelum	1,304	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindee	1,866	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Tallagunge	660	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Attock	174	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Huzara (7 months)	461	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Murree	78	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nowshera	800	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cherat (8 months)	110	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur	3,084	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ out-posts	471	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Troops on march, Punjab	...	...	...	...	...	...	...	...	...	...	...	...	4	4	...	...
	15,712	...	...	...	...	...	...	...	...	...	2	3	4	9	...	·6
Bengal Presidency	39,179	...	...	...	209	420	273	399	762	1,634	690	141	19	4,547	...	116·1
Murdan	853	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abbottabad	1,365	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kohat and out-posts	2,309	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bunnoo and out-posts	1,734	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ghazee Khan and out-posts	1,517	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan and out-posts	1,696	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajanpore and out-posts	547	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	10,022	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Augur	205	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goonah	834	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sirdarpore	404	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kherwarrah	500	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erinpoorah	748	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deolee	756	..	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Sehore	806	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmere	601	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NATIVE TROOPS, 1872.

XVI.

***TABLE** showing the **PREVALENCE** of **FEVER** in each **MONTH**, and the **DISTRIBUTION** of **FEVERS** by **STATIONS** and **PROVINCES**.*

STATIONS AND AVERAGE STRENGTH DURING THE PERIOD OF OCCUPATION.		NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admission-rate per 1,000 of Strength.	Admission-rate for each Province.	Total Deaths of the Year.	Death-rate for each Province.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.					
Fort William	584	24	6	29	25	2	10	7	16	13	10	14	42	198	351·0	610·6	2	3·16
Alipore	898	17	25	28	67	17	17	23	55	47	70	116	127	609	678·2		6	
Dum-Dum	204	10	7	12	14	...	...	2	...	7	18	10	31	111	544·1		1	
Barrackpore	707	13	7	5	186	45	22	46	48	57	90	63	66	648	916·5		3	
Berhampore	110	8	4	6	13	1	3	1	...	7	13	11	5	72	654·5		...	
Dacca	298	14	4	6	34	36	27	25	10	16	22	15	12	221	741·6		1	
Cachar and out-posts	543	78	72	55	34	15	19	15	21	30	28	56	10	433	797·4		4	
Sylhet (9 months)	114	...	...	...	8	7	11	5	6	9	5	5	2	58	508·8		...	
Shillong and out-posts	604	5	11	12	47	29	33	36	21	19	21	14	14	262	433·8		...	
Gowhatty	417	7	6	3	20	27	22	47	24	35	49	54	19	313	750·6		1	
Tezpore	151	2	5	4	43	12	6	12	12	9	10	3	10	128	847·7		...	
Nowgong	82	1	5	...	7	3	4	11	4	6	11	11	2	65	792·7		...	
Debrooghur	689	10	6	9	37	27	38	49	50	62	84	54	29	455	660·4		1	
Buxa	611	17	18	17	11	14	20	26	19	16	25	8	18	209	342·1		...	
Julpigoree (10 months)	352	...	...	8	26	20	20	28	6	14	9	26	36	193	548·3		2	
Bhaugulpore	388	...	2	2	31	12	9	10	8	7	11	1	3	96	247·4		...	
MONTHLY PERCENTAGE OF THE TOTAL		5·2	4·4	4·8	14·8	6·6	6·4	8·4	7·4	8·5	11·7	11·3	10·6	...	100·0	...	...	...
Dinapore	487	2	1	...	10	7	...	21	34	18	33	12	8	146	299·8	467·7	...	·85
Segowlie	291	3	2	3	...	1	...	...	2	2	3	...	1	17	58·4		...	
Benares	559	10	7	6	18	8	44	49	2	4	6	36	10	200	357·8		...	
Chunar	70	1	...	1	...	...	3	6	17	20	4	2	...	54	771·4		...	
Goruckpore	651	37	26	12	27	37	58	51	30	68	113	58	110	627	963·1		...	
Fyzabad	688	16	7	9	16	16	9	17	9	38	92	27	10	266	386·6		2	
Lucknow	1,084	28	22	13	20	38	33	78	69	97	129	49	30	606	559·1		1	
Seetapore (9 months)	210	...	...	5	9	7	6	3	3	7	7	3	3	48	228·6		...	
Futtehghur	176	4	2	5	7	6	7	8	6	3	27	27	10	112	636·4		...	
Cawnpore	738	7	26	23	33	19	15	30	20	58	100	54	26	411	556·9		2	
Allahabad	922	9	9	9	14	13	6	24	32	41	34	15	22	231	250·5		...	
Nagode (9 months)	103	...	...	...	2	2	3	1	5	8	11	6	4	42	407·8		...	
MONTHLY PERCENTAGE OF THE TOTAL		4·2	3·7	3·0	5·6	5·6	6·7	10·4	8·3	13·3	20·3	10·4	8·5	...	100·0	...	...	...
Shahjehanpore	270	6	4	9	...	...	...	5	5	13	11	8	1	62	229·6	469·3	...	2·37
Bareilly	895	2	26	15	24	8	6	19	15	46	71	21	13	265	296·1		3	
Moradabad	400	4	3	7	7	7	3	8	11	12	26	13	2	103	257·5		2	
Almorah	538	...	...	3	12	9	28	15	19	18	14	7	13	138	256·5		1	
Deyrah	435	1	5	5	64	11	7	6	6	15	8	3	7	138	317·2		...	
Roorkee (11 months)	656	...	5	5	37	12	12	16	33	36	15	5	9	185	282·0		1	
Meerut	840	5	22	12	29	22	23	63	144	316	92	18	23	769	915·5		2	
Delhi	658	9	6	12	16	44	22	63	92	109	107	35	13	519	791·2		2	
MONTHLY PERCENTAGE OF THE TOTAL		1·2	3·3	3·1	8·7	5·2	4·7	8·5	14·9	25·9	15·8	6·0	3·7	..	100·0	...	...	.
Agra	932	35	36	28	54	43	36	51	73	5	120	49	100	630	676·0	861·9	1	1·82
Morar	1,547	198	100	78	103	131	93	104	92	214	288	229	149	1,779	1150·0		4	
Jhansi	655	13	14	4	10	9	7	15	29	94	120	62	40	417	636·6		1	
Nowgong	290	17	16	10	2	...	7	13	9	17	25	23	15	154	531·0		...	
Seepree, Sambhur and Ulwar	151	1	1	5	6	4	3	11	16	11	27	6	9	100	662·3		...	
Lullutpore	70	5	7	1	4	3	6	12	5	6	13	4	3	69	985·7		...	
Deolee	199	7	5	8	6	13	5	12	10	31	42	15	10	164	824·1		1	
MONTHLY PERCENTAGE OF THE TOTAL		8·3	5·4	4·0	5·6	6·1	4·7	6·6	7·1	11·4	19·2	11·7	9·9	...	100·0	...	...	.
Umballa	863	8	18	11	12	31	22	19	168	395	326	111	26	1,147	1329·1	851·0	5	2·03
Simla (6 months)	164	...	...	...	...	10	8	7	8	14	10	...	...	57	347·5		...	
Loodianah	120	...	3	1	6	9	9	17	25	50	65	9	3	197	1641·7		...	
Phillour (10 months)	38	...	...	...	...	2	2	...	...	24	23	11	1	63	1657·9		...	
Jullundur	490	...	7	5	10	10	17	23	30	131	78	64	34	409	834·7		...	
Ferozepore	634	8	12	9	11	11	3	16	16	37	33	23	13	192	302·8		...	
Mooltan	957	13	5	7	12	10	47	62	103	226	422	277	97	1,281	1338·5		1	
Sealkote	907	13	8	14	34	11	25	25	39	98	65	32	8	372	410·1		1	
Dhurmsalla	500	10	11	13	27	21	22	34	22	53	35	18	21	287	574·0		2	
Bukloh	444	3	3	3	70	30	14	15	9	31	16	13	10	217	488·7		...	
Umritsur	267	8	7	2	6	11	7	12	56	152	111	72	37	481	1801·5		...	
Meean Meer	1,261	14	35	33	39	24	28	41	268	410	691	305	106	1,994	1581·3		2	
Jhelum	1,304	23	13	5	23	51	24	68	68	179	421	235	89	1,199	919·5		1	
Rawulpindee	1,866	41	12	12	34	23	22	23	20	32	62	45	15	341	182·7		2	
Tallagunge	560	20	8	2	4	8	12	10	27	70	70	32	14	277	494·6		...	
Attock	174	13	6	3	2	1	6	3	6	10	94	45	30	219	1258·6		...	
Huzara (7 months)	461	...	...	...	4	12	9	9	8	21	15	...	...	78	169·2		...	
Murree	78	...	...	...	6	1	1	1	2	1	1	1	1	15	192·3		1	
Nowshera	809	29	28	15	10	8	9	56	63	130	228	147	78	801	990·1		...	
Cherat (8 months)	110	...	...	...	2	...	2	2	4	9	2	...	...	21	190·9		...	
Peshawur	3,084	135	101	79	65	69	64	57	169	763	870	461	212	3,045	987·3		13	
„ out-posts	471	6	9	1	2	2	3	35	82	97	204	65	20	526	1116·8		1	
MONTHLY PERCENTAGE OF THE TOTAL		2·0	2·2	1·6	2·0	2·7	2·7	4·0	9·0	22·2	28·4	14·9	6·8	...	100·0	...	...	...
MONTHLY PERCENTAGE OF THE TOTAL FOR THE PRESIDENCY	...	3·8	3·2	2·7	5·9	4·3	4·2	6·1	8·9	18·0	22·6	12·6	7·7	...	100·0	...	...	...
Murdan	853	15	21	23	14	15	13	20	25	69	165	75	39	494	579·1	1093·4	1	4·29
Abbottabad	1,365	60	53	24	43	48	67	79	88	73	67	52	51	705	516·5		2	
Kohat and out-posts	2,309	152	170	91	110	117	105	148	330	615	675	265	172	2,950	1277·6		11	
Bunnoo and out-posts	1,734	210	104	56	36	28	34	53	90	215	648	518	313	2,303	1328·1		12	
Dera Ghazee Khan and out-posts	1,517	173	75	50	43	34	50	78	107	276	495	293	194	1,928	1270·9		6	
Dera Ismael Khan and out-posts	1,696	45	69	34	52	42	59	59	123	323	614	400	218	2,038	1201·6		9	
Rajanpore and out-posts	547	14	11	9	17	8	40	24	15	35	220	113	27	542	990·9		2	
MONTHLY PERCENTAGE OF THE TOTAL		6·1	4·6	2·6	2·9	2·6	3·4	4·2	7·6	14·7	26·3	15·7	9·3	...	100·0	...	...	...
Augur	295	8	1	1	4	2	2	1	2	1	8	7	3	35	118·6	514·2	1	1·80
Goonah	334	3	5	5	3	6	6	12	9	16	19	5	4	93	278·4		...	
Sirdarpore	404	21	10	7	6	5	3	9	15	29	67	26	21	219	542·1		...	
Kherwarrah	500	20	31	17	20	8	8	9	14	34	121	81	43	406	812·0		1	
Erinpoorah	748	12	8	11	17	5	9	4	8	33	144	102	26	379	506·7		...	
Deolee	756	18	19	14	16	11	12	11	22	56	75	30	13	297	392·9		4	
Sehore	806	50	16	33	57	41	13	32	26	42	140	58	32	540	670·0		1	
Ajmere	601	26	16	17	19	23	16	14	21	28	84	35	17	316	525·8		1	
MONTHLY PERCENTAGE OF THE TOTAL		6·7	4·6	4·6	6·2	4·4	3·0	4·0	5·1	10·5	28·8	15·1	7·0	...	100·0	...	...	..

NATIVE

X

ABSTRACT of the RETURNS showing the ADMISSIONS

(The Statistics in this Table must not be regarded as showing witl

1.—*REGIMENTS of BENGAL*

	REGIMENT AND STATION OF 1872.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH.		Admission-rate of 1872 per 1,000 of the Average Strength.	INVALIDED.		DIED.		LOSS PER 1000.	
			Number borne on the Rolls.	Average Strength present during 1872.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	13th Native Infantry, Fort William ...	December 1869, from Jullundur ...	695	622	1746·0	22	16	17	13	23·02	43·16
2	8th Native Infantry, Alipore ...	December 1869, from Jhansi ...	670	577	2448·9	29	7	11	10	10·45	31·34
3	10th Native Infantry, Barrackpore, Alipore, and Dum-Dum ...	February 1872, from Cawnpore ...	712	653	2758·0	23	27	11	4	37·92	21·07
4	Body-Guard, Ballygunge ...	......	62	24	...	1	1	...	...	16·13	...
5	27th Native Infantry, Barrackpore* (Detachment at Dum-Dum) ...	April 1872, from Bareilly ...	671	503	2407·2	43	22	9	3	32·79	17·88
6	16th Native Infantry, Wing, Dacca ...	March 1872, from Shahjehanpore and Moradabad ...	355	303	1828·4	9	2	1	...	5·63	2·82
7	4th Native Infantry, Cachar and out-posts* ...	December 1870, from Allahabad ...	609	527	1918·4	53	64	15	5	105·09	32·84
8	44th Native Infantry, Shillong and out-posts ...	......	842	727	1708·4	52	14	40	1	16·63	48·70
9	43rd Native Infantry, Gowhatty (Detachments at Tezpore and Nowgong) ...	......	879	805	1695·6	18	15	20	2	17·07	25·03
10	42nd Native Infantry, Upper Assam* ...	......	867	744	1971·8	10	30	51	3	34·60	62·28
11	41st Native Infantry, Buxa ...	December 1868, from Agra ...	691	610	1044·3	12	11	6	4	15·92	14·47
12	16th Native Infantry, Wing, Julpigoree ...	March 1872, from Shahjehanpore and Moradabad ...	406	354	1186·4	12	1	9	5	2·46	34·48
13	37th Native Infantry, Bhaugulpore (Detachment of 100 men at Berhampore) ...	December 1868, from Goruckpore...	693	639	1187·8	9	1	1	2	1·44	4·33
	REGIMENTS OF BENGAL PROPER AND ASSAM ...		8,152	7,088	1857·6	203	211	191	52	25·89	29·81

2.—*REGIMENTS of BEHAR, BENARES,*

	REGIMENT AND STATION OF 1872.	Date of Arrival from Station previously occupied.	Number borne on the Rolls.	Average Strength present during 1872.	Admission-rate of 1872 per 1,000 of the Average Strength.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	2nd Native Infantry, Dinapore ...	April 1872, from Julpigoree ...	697	632	916·1	13	10	6	11	14·35	24·39
2	4th Bengal Cavalry, Segowlie (Detachments at Goruckpore and Benares) ...	December 1869, from Bareilly ...	457	387	421·2	6	5	5	4	10·94	19·69
3	5th Native Infantry, Benares, with Detachment of 70 men at Chunar ...	January 1868, from Dacca ...	706	630	1737·1	11	6	4	2	8·50	8·50
4	19th Native Infantry, Goruckpore ...	December 1868, from Bhaugulpore	692	585	2056·4	29	20	2	7	28·90	13·01
5	38th Native Infantry, Fyzabad ...	November 1868, from Nagode ...	686	593	1217·5	6	14	8	3	20·41	16·03
6	13th Bengal Cavalry, Lucknow ...	March 1868, from Peshawur ...	439	373	1230·6	6	7	5	...	15·95	11·39
7	9th Native Infantry, Lucknow ...	January 1870, from Barrackpore...	696	632	1601·3	6	10	11	3	14·37	20·12
8	7th Bengal Cavalry, Seetapore (Detachment of 126 men at Fyzabad) ...	April 1872, from Nowgong and Nagode ..	454	392	1045·9	12	7	...	3	15·42	6·61
9	1st Bengal Cavalry, Cawnpore (Detachment at Barrackpore) ...	February 1872, from Morar ...	456	406	1253·7	7	18	5	3	39·47	17·54
10	35th Native Infantry, Cawnpore ...	February 1872, from Meean Meer...	682	606	1024·7	8	7	15	2	10·26	24·93
11	11th Bengal Cavalry, Allahabad ...	December 1868, from Umballa ...	457	352	625·0	2	3	...	4	6·56	8·75
12	33rd Native Infantry, Allahabad ...	November 1870, from Morar ...	705	626	1616·6	31	...	6	5	...	15·60
	REGIMENTS OF BEHAR, BENARES, OUDE, AND CAWNPORE ...		7,127	6,223	1288·8	137	107	67	47	15·01	16·00

* These Regiments were attached to the Lushaie Field Force in the first three months of the year.

TROOPS, 1872.

VII.

DEATHS, and INVALIDING of each REGIMENT for the Year.

ccuracy the relation to Locality of the Sickness and Mortality of Regiments.)

PROPER, BHOOTAN, and ASSAM.

	Total Admissions into Hospital, and Deaths in Hospital during the year.		Causes of Admissions into Hospital, and of Deaths in Hospital during the Year.																										
			Cholera.	Dengue.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Footsore.	All other Causes.
1	Admitted ...	1,086	4	407	191	31	12	3	16	...	21	1	12	12	1	61	4	135	11	...	10	...	3	50	13	22	31	14	21
	Died ...	17	3	...	2	...	...	2	1	...	4	...	...	...	...	...	1	2	1	...	...	...	...	...	...	...	1	...	...
2	Admitted ...	1,413	...	313	388	14	27	1	21	...	4	1	8	16	...	30	4	255	16	2	41	1	8	47	1	53	55	82	25
	Died ...	11	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	1	...	...	...	...	...	...	...
3	Admitted ...	1,801	3	512	388	16	45	27	51	...	7	...	11	10	3	63	8	303	12	2	39	5	5	57	2	43	32	60	67
	Died ...	11	1	...	1	...	...	1	3	...	1	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	1	...	...
4	Admitted ...	171	...	35	79	...	...	...	1	...	...	...	1	2	...	5	...	12	5	1	4	...	2	1	...	3	20	...	...
	Died ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Admitted ...	1,241	2	211	552	9	62	9	24	1	3	2	3	4	...	45	14	163	17	2	17*	1	1	15	...	25	30	16	13
	Died ...	9	...	...	3	...	...	...	...	...	2	1	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
6	Admitted ...	554	3	70	217	4	13	...	9	...	1	...	3	1	...	21	...	115	...	2	22	...	2	5	...	13	18	3	32
	Died ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Admitted ...	1,011	9	...	437	13	56	4	10	...	...	...	2	25	...	35	9	205	12	...	9	...	3	50	...	19	37	59	17
	Died ...	15	6	...	5	...	...	2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
8	Admitted ...	1,242	35*	2	420	33	54	4	61	...	...	...	3	17	...	34	7	302	12	5	20	1	12	18	...	52	99	34	17
	Died ...	40	31	...	1	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	5†	...	...
9	Admitted ...	1,365	10	10	535	44	46	3	36	1	8	1	8	23	...	71	6	116	27	4	29	1	5	28	...	140	108	60	45
	Died ...	20	4	...	1	...	...	...	1	1	2	1	...	...	...	1	1	3	...	...	...	1	...	...	...	...	3	...	1
10	Admitted ...	1,467	54	...	550	9	50	2	18	...	2	...	9	12	...	56	4	348	8	...	37	1	10	64	...	89	78	22	46
	Died ...	51	43	...	1	...	...	...	...	...	2	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	2	...	...
11	Admitted ...	637	...	...	209	5	7	8	...	...	...	...	9	4	...	59	5	116	1	1	13	2	1	23	1	36	64	11	62
	Died ...	6	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1	3	...	...	...	...	...	...	...	...	...	...	...
12	Admitted ...	420	3	...	201	1	10	...	9	...	...	...	1	6	...	3	3	88	...	...	10	2	...	3	...	20	24	25	11
	Died ...	9	1	...	1	...	...	...	1	...	1	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	1	...	1
13	Admitted ...	759	1	64	249	29	29	2	18	...	...	...	5	7	...	34	3*	89	...	2	14	1	2	14	1	64	64	48	19
	Died ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
	Admitted ...	13,167	124	1654	4,416	208	411	63	274	2	46	5	75	139	4	517	67	2,245	121	21	265	15	54	375	18	579	660	434	375
	Died ...	191	90	...	20	...	...	6	8	1	12	2	...	...	...	6	6	22	1	...	...	2	...	...	...	...	13	...	2

OUDE, and CAWNPORE.

			Cholera.	Dengue.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Footsore.	All other Causes.
1	Admitted ...	570	2	41	209	5	13	11	4	..	...	2	1	6	2	19	5	87	1	2	7	1	1	11	...	31	42	33	43
	Died ...	6	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...
2	Admitted ...	163	...	11	79	6	4	...	2	...	...	...	1	2	...	3	2	14	...	3	1	...	2	1	1	5	23	...	3
	Died ...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	1	...	1
3	Admitted ..	1,110	2	457	240	27	30	1	33	...	2	...	4	8	...	23	2	75	5	...	19	...	11	8	2	38	27	69	27
	Died ...	4	...	..	...	...	...	...	1	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...
4	Admitted ...	1,203	...	4	666	25	36	...	22	...	7	...	10	35	...	23	7	50	14	2	5	1	5	24	...	63	40	115	40
	Died ...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1
5	Admitted ...	722	1	230	251	20	20	...	1	...	2	...	3	15	...	2	3	64	4	1	14	1	2	33	...	20	6	...	20
	Died ...	8	1	...	2	...	...	...	...	...	1	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	1	...	...
6	Admitted ..	450	4	15	229	3	16	1	...	...	...	...	4	27	1	11	...	24	...	...	7	1	4	16	...	50	39	...	7
	Died ...	5	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...
7	Admitted ...	1,012	4	226	341	19	77	...	...	...	2	...	4	11	...	37	2	57	1	1	8	..	2	19	...	96	34	47	24
	Died ...	11	3	..	1	...	...	...	...	...	2	...	...	...	...	2	1	...	1	...	...	...	...	...	...	...	...	...	1
8	Admitted ...	410	...	36	146	11	15	...	...	...	...	..	9	27	...	9	4	25	5	2	10	...	2	10	...	35	58	..	6
	Died ...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	Admitted ...	509	1	4	213	9	31	1	1	...	...	1	2	16	...	3	6	38	...	1	10	...	2	13	4	50	91	6	6
	Died ...	5	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1
10	Admitted ...	621	1	1	305	5	12	...	3	...	...	...	1	14	...	12	19	87	...	...	...	...	6	4	...	100	30	16	5
	Died ...	15	1	...	2	...	...	...	...	...	1	...	...	..	...	1	8	..	...	...	...	...	...	...	...	...	2	...	...
11	Admitted ...	220	...	47	78	2	7	...	2	...	...	...	3	7	...	10	..	19	...	..	1	...	2	4	...	10	24	2	2
	Died ...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	..	...
12	Admitted ...	1,012	7	555	158	11	16	2	6	1	..	...	7	16	...	28	7	49	1	...	12	3	3	19	...	52	16	33	10
	Died ...	6	4	...	...	...	...	...	1	...	...	...	...	..	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
	Admitted ...	8,020	22	1627	2,915	143	277	16	74	1	13	3	49	184	3	180	57	598	31	12	94	7	42	162	7	559	430	321	193
	Died ...	67	15	...	6	...	...	...	3	...	5	...	...	...	1	5	12	4	2	2	...	...	...	...	...	...	8	...	4

---

* Some of the Cholera Admissions of this Regiment are not accounted for in the Annual Return.

† Killed in action.

3.—*REGIMENTS of ROHILCUND*

	REGIMENT AND STATION OF 1872.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH: Number borne on the Rolls.	REGIMENTAL STRENGTH: Average Strength present during 1872.	Admission-rate per 1,000 of the Average Strength.	INVALIDED: To their homes for change of air.	INVALIDED: For Discharge.	DIED: With the Regiment.	DIED: Absent from the Regiment.	LOSS PER 1,000: By Invaliding for Discharge.	LOSS PER 1,000: By Deaths.
1	45th Native Infantry, Wing, Shahjehanpore ...	February 1872, from Mooltan ...	708	264	617·4	21	41	4	1	57·91	16·95
2	45th Native Infantry, Wing, Moradabad ...			379	738·8			5	2		
3	2nd Bengal Cavalry, Bareilly (Detachment of 50 men at Moradabad) ...	February 1870, from Deolee and Jhansi ...	458	358	659·2	8	19	4	...	41·48	8·73
4	11th Native Infantry, Bareilly ...	February 1872, from Dum-Dum ...	686	589	971·1	...	26	15	24	37·90	56·85
5	3rd Goorkhas, Almorah, with Detachments at Petoraghur and Nynee Tal ...	......	681	607	792·4	12	15	10	4	22·03	20·50
6	2nd Goorkhas, Deyrah* (Detachment of 165 men at Simla) ...	......	716	593	1408·1	7	19	28	3	26·54	43·30
7	Sappers and Miners, Roorkee (Detachments at Rawulpindee and Peshawur) ...	......	1,142	1,036	984·6	13	23	20	5	20·14	21·89
8	9th Bengal Cavalry, Meerut (Detachments at Delhi and Agra) ...	February 1870, from Segowlie ...	454	404	1019·8	5	36	3	...	79·20	6·61
9	3rd Native Infantry, Meerut ...	March 1870, from Peshawur ...	700	631	1291·6	1	29	14	3	41·43	24·29
10	20th Native Infantry, Delhi ...	January 1872, from Tullagunge ...	687	598	1359·5	15	53	5	7	77·15	17·47
	REGIMENTS OF ROHILCUND AND MEERUT ...		6,315	5,459	1030·8	82	261	108	49	41·33	21·86

4.—*REGIMENTS of AGRA*

	REGIMENT AND STATION OF 1872.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH: Number borne on the Rolls.	REGIMENTAL STRENGTH: Average Strength present during 1872.	Admission-rate per 1,000 of the Average Strength.	INVALIDED: To their homes for change of air.	INVALIDED: For Discharge.	DIED: With the Regiment.	DIED: Absent from the Regiment.	LOSS PER 1,000: By Invaliding for Discharge.	LOSS PER 1,000: By Deaths.
1	1st Native Infantry, Agra ...	November 1868, from Dum-Dum ...	679	616	2826·3	17	38	6	4	55·96	14·73
2	40th Native Infantry, Agra (Detachment of 175 men at Futtehghur) ...	February 1869, from Banda and Nowgong ...	727	656	1840·1	21	...	8	4	...	16·51
3	6th Bengal Cavalry, Morar ...	February 1872, from Cawnpore ...	455	340	779·4	24	3	4	1	6·59	10·99
4	6th Native Infantry, Morar ...	January 1870, from Julpigoree ...	689	623	1767·4	21	17	5	2	24·67	10·16
5	34th Native Infantry, Morar ...	November 1870, from Lucknow ...	711	619	2348·9	68	4	8	4	5·63	16·68
6	39th Native Infantry, Jhansi (Detachments at Lullutpore and Seepree) ...	December 1869, from Lucknow ...	693	634	1304·4	11	4	11	4	5·77	21·64
7	3rd Bengal Cavalry, Nowgong (Detachment of 100 men at Nagode) ...	March 1872, from Jhelum ...	458	376	1292·6	19	3	3	2	6·55	10·91
8	14th Bengal Cavalry, Deolee (Detachment of 120 men at Jhansi) ...	December 1869, from Meerut ...	463	369	1556·4	4	3	3	2	6·48	10·80
	REGIMENTS OF AGRA AND CENTRAL INDIA ...		4,875	4,233	1810·8	185	72	48	23	14·77	14·56

5.—*REGIMENTS of*

	REGIMENT AND STATION OF 1872.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH: Number borne on the Rolls.	REGIMENTAL STRENGTH: Average Strength present during 1872.	Admission-rate per 1,000 of the Average Strength.	INVALIDED: To their homes for change of air.	INVALIDED: For Discharge.	DIED: With the Regiment.	DIED: Absent from the Regiment.	LOSS PER 1,000: By Invaliding for Discharge.	LOSS PER 1,000: By Deaths.
1	12th Bengal Cavalry, Umballa (Detachment at Jullundur) ...	December 1868, from Abyssinia ...	449	379	1089·7	5	25	1	3	55·68	8·91
2	32nd Native Infantry, Umballa ...	February 1872, from Raneekhet ...	700	644	2007·8	8	21	11	5	30·00	22·86
3	7th Native Infantry, Jullundur (Detachments at Phillour and Loodianah) ...	March 1872, from Lucknow ...	710	662	1546·8	3	3	1	4	4·23	7·01
4	28th Native Infantry, Ferozepore ...	February 1870, from Peshawur ...	702	607	807·3	2	51	3	2	72·65	7·12
5	19th Bengal Cavalry, Mooltan ..	March 1870, from Peshawur ...	459	357	1117·7	2	8	1	1	17·43	4·36
6	31st Native Infantry, Mooltan ...	November 1871, from Nowshera ...	708	624	2232·4	8	6	3	...	8·47	4·24
7	17th Bengal Cavalry, Sealkote ...	March 1872, from Seetapore ...	461	398	1670·9	9	10	2	3	21·70	10·85
8	12th Native Infantry, Sealkote ...	February 1869, from Jubbulpore...	709	636	641·5	4	10	4	1	14·10	7·05
9	1st Goorkhas, Dhurmsalla (Detachment at Kangra) ...	......	685	616	1148·1	10	40	12	3	58·39	21·90
10	4th Goorkhas, Bukloh* ...	......	672	571	1800·1	21	1	9	2	1·49	16·37
11	18th Bengal Cavalry, Meean Meer ...	November 1870, from Peshawur ...	453	345	1327·5	9	5	3	1	11·04	8·83
12	17th Native Infantry, Wing, Meean Meer ...	February 1872, from Delhi ...	440	393	2005·1	18	18	15	5	25·60†	29·87†
13	24th Native Infantry, Meean Meer ...	November 1870, from Rawulpindee	703	571	2737·3	19	36	9	5	51·21	19·91
14	17th Native Infantry, Wing, Umritsur ...	February 1872, from Delhi ...	263	238	2401·6	...	...	1	...	...	3·80
15	5th Bengal Cavalry, Jhelum ...	December 1871, from Nowshera ...	457	396	1588·4	7	12	3	2	26·26	10·94
16	29th Native Infantry, Jhelum ...	March 1869, from Shahjehanpore and Moradabad ...	708	625	1459·2	13	7	6	3	9·89	12·71
17	22nd Native Infantry, Jhelum* ...	April 1872, from Dacca ...	682	565	2842·5	23	31	26	9	45·45	51·32

* Was attached to the Looshaie Field Force in the early months of the year.

† Ratio for both wings.

XVII—(continued).

	Total Admissions into Hospital, and Deaths in Hospital, during the Year.		Causes of Admissions into Hospital and of Deaths in Hospital during the Year.																										
			Cholera.	Dengue.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Footsore.	All other Causes.
and MEERUT.																													
1	Admitted ...	163	5	...	53	7	3	...	2	...	...	...	1	2	...	11	3	15	1	2	2	1	3	8	1	19	5	9	10
	Died ...	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
2	Admitted ...	280	...	...	95	9	10	...	1	...	...	...	3	4	...	18	8	19	6	.	4	...	1	10	...	41	8	33	10
	Died ...	5	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
3	Admitted ...	236	1	...	72	3	4	...	3	...	...	...	[illegible]	26	...	5	1	3	...	.	1	1	2	7	...	38	60	2	7
	Died ...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	2
4	Admitted ...	572	1	...	210	5	17	...	29	...	1	2	5	8	...	31	4	67	6	...	8	...	1	10	...	55	27	77	8
	Died ...	15	...	...	3	...	...	...	3	...	...	2	...	...	...	2	...	4	1	...	...	...	...	...	...	...	...	...	...
5	Admitted ...	481	...	...	171	81	42	1	9	...	3	...	...	16	...	19	5	22	...	2	22	1	6	5	...	46	17	3	10
	Died ...	10	...	...	4	...	...	...	...	...	2	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	1	...	...
6	Admitted ...	835	8	...	316	35	28	1	4	...	5	1	2	42	...	29	5	101	50	12	21	...	8	5	...	28	77	30	18
	Died ...	28	10	...	...	...	...	...	...	...	1	...	...	...	1	2	...	7	...	2	...	...	...	...	...	...	2	...	3
7	Admitted ...	1,020	12	...	385	45	42	2	31	...	3	...	8	21	1	25	11	131	8	1	18	1	6	20	1	82	86	46	25
	Died ...	20	8	...	1	...	...	...	...	...	2	...	...	...	...	1	4	2	...	...	...	...	...	...	...	...	...	...	2
8	Admitted ...	412	1	37	278	5	6	...	...	...	...	...	...	8	...	7	3	29	2	...	3	...	1	1	2	8	19	...	2
	Died ...	3	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
9	Admitted ...	815	1	1	591	10	7	...	4	1	...	...	...	7	1	29	13	71	4	...	3		1	1	...	15	3	...	52
	Died ...	14	...	...	1	...	...	...	1	...	1	...	...	...	1	5	3	2	...		...		...	...	...	...	...	...	...
10	Admitted ...	813	...	121	440	26	23	2	7	...	3	...	1	6	1	6	6	59	5	...	13	...	1	12	3	53	9	13	3
	Died ...	5			2				1	...	1	...	...	...	...		1	...			...	...	...		...	...	...	...	...
	Admitted ...	5,627	29	159	2,811	226	182	6	90	1	15	3	20	140	3	180	69	617	82	17	95	1	30	88	7	385	311	222	145
	Died ...	108	21	...	16	...	...		5	...	8	2	...	...	2	11	11	17	1	2	...	...	...	...	...	...	5	...	7
and CENTRAL INDIA.																													
1	Admitted ...	1,741	...	647	438	28	134	...	6	...	2	...	1	24	...	30	4	76	1	1	14	...	6	22	...	101	57	113	36
	Died ...	6	...	...	...	...	...	...	...	...	2	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	1	...	...
2	Admitted ...	1,213	...	450	383	21	30	1	1	...	1	...	7	19	...	36	3	60	4	5	18	...	9	22	1	76	34	19	13
	Died ...	8	...	...	1	...	...	...	...	...	...	...	...	...	...	2	1	...	...	1	...	...	...	...	...	1	2	...	...
3	Admitted ...	265	...	...	90	21	10	...	11	...	1	...	8	4	...	9	2	14	4	1	5	...	5	9	2	20	42	4	3
	Died ...	4	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1
4	Admitted ...	1,101	...	...	654	73	19	...	14	...	...	...	2	7	...	44	1	39	11	1	6	...	3	22	5	72	24	63	41
	Died ...	5	...	...	1	...		...	...		...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	1	...	...
5	Admitted ...	1,154	...	...	1,039	22	15	2	8	...	1	...	18	40	...	46	8	70	4	2	8	...	2	15	...	65	77	...	12
	Died ...	8	...	...	2	...	...	...	...	...	1	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	1
6	Admitted ...	827	...	...	424	20	35	...	24	...	...	...	6	12	1	47	4	31	14	3	8	...	6	9	...	118	28	32	5
	Died ...	11	...	...	1	...	...	...	1	...	...	...	...	...	...	6	...	...	1	...	...	...	...	...	...	...	1	...	1
7	Admitted ...	486	...	...	174	12	21	...	3	...	...	...	2	9	...	7	2	14	8	2	32	2	...	15	...	73	97	4	9
	Died ...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1
8	Admitted ...	578	...	...	285	17	30	...	2	...	...	...	7	11	...	22	3	17	2	...	16	...	7	6	14	78	54	2	5
	Died ...	3	...	...	1			...		...		...	...	...	...	2	...			...			...	...					
	Admitted ...	7,665	...	1097	3,487	211	294	3	69		5	...	51	126	1	211	27	321	48	15	107	2	38	120	22	603	413	237	124
	Died ...	48	...	...	7	...	...	...	1	...	3	...	...	...	...	13	9	1	2	1	...		...		...	1	6	...	4
the PUNJAB.																													
1	Admitted ...	413	2	...	251	6	24	...	1	...	...	...	2	14	...	8	3	13	2	...	8	...	1	6	...	25	33	7	7
	Died ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...		...	...	...	...
2	Admitted ...	1,351	...	...	949	16	31	...	2	2	3	...	7	51	...	20	9	54	1	...	38	1	2	19	...	30	88	9	19
	Died ...	11	...	...	5		...	...	...	...	1	...	...	...	...	...	4	1	...	...	...	...	...			...	...	...	...
3	Admitted ...	1,024	...	5	659	11	63	...	2	2	...	...	3	21	...	20	2	48	9	1	12		2	20	1	68	13	57	5
	Died ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...		1	...	...	...		...	...		...	...	...	...
4	Admitted ...	490	...	...	190	17	38	...	...	...	...	...	1	30	...	25	8	32	17	2	7	...	5	16	...	84	2	...	10
	Died ...	3	...	...	...	...	...	...	...	...	...	...	...		...	...	1	...	1		...	...		...			...	...	1
5	Admitted ...	399	...	...	217	...	3	...	...	...	...	...	1	26	...	8	1	21	3	...	11			4	1	18	77	4	4
	Died ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...			...		...	...
6	Admitted ...	1,393	...	...	1,070	11	9	2	13	...	...	...	4	19	...	22	6	58	4	2	28	...	4	9	1	61	38	22	10
	Died ...	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...		...	...			1	...	...
7	Admitted ...	665	...	...	175	10	42	6	8	...	...	...	7	27	...	35	6	57	...	1	62	2	5	12	10	66	102	2	30
	Died ...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
8	Admitted ...	408	...	...	223	10	12	3	7	...	...	...	8	5	...	11	1	22	...	...	11	1	...	10	...	30	12	29	13
	Died ...	4	...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	1
9	Admitted ...	706	...	...	342	25	53	[illegible]	3	...	4	...	2	31	...	13	2	29	...	...	23	1	7	4	...	33	33	57	40
	Died ...	12	...	...	3	...	1	...	1	...	4	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	1
10	Admitted ...	1,033	1	...	522	28	34	20	32	...	...	...	10	10	...	44	7	72	4	...	18	...	2	11	...	35	121	37	31
	Died ...	9	3*		1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	3	...	1
11	Admitted ...	458	3	...	336	7	2	...	3	...	2	...	...	12	...	5	3	11	...	...	4	...	1	5	2	19	33	5	5
	Died ...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...		...	...	...	...	1	...	...
12	Admitted ...	788	13	...	512	2	25	1	7	...	3	1	8	4	...	18	7	81	4	...	[illegible]	...	...	4	...	63	8	18	6
	Died ...	5	8	...	2	...	...	...	...	...	1	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	1
13	Admitted ...	1,563	7	...	1,140	15	56	...	6	...	2	...	4	12	...	34	8	52	1	4	22	...	...	40	1	114	28	9	8
	Died ...	9	3	...	2	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...		...	1	...	...
14	Admitted ...	503	...	...	473	8	10	2	1	...	...	...	...	...	...	5	5	23	3	...	9	...	...	...	...	27	14	10	3
	Died ...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	Admitted ...	629	5	...	263	7	15	...	5	...	...	...	5	14	1	13	3	47	2	1	23	1	5	6	...	72	134	...	7
	Died ...	3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
16	Admitted ...	912	1	...	530	16	27	...	5	...	...	...	7	14	...	26	8	98	1	1	28	2	2	14	2	83	31	...	16
	Died ...	6	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...
17	Admitted ...	1,606	19	...	801	10	47	...	13	...	1	...	7	19	...	84	8	322	10	1	71	3	...	33	...	37	45	51	24
	Died ...	26†	12†	...	3	...	...	...	...	...	...	...	...	...	...	...	3	7	...	...	...	...	...	...	...		1	...	...

* Two of these deaths occurred in a recruiting party at Lucknow, and the third in Eastern Bengal.

† Two deaths only occurred at Jhelum, and one at Attock. The remaining deaths occurred while the Regiment was attached to the Loshaie Force, and on the [illegible] The cholera deaths occurred in Eastern Bengal.

REGIMENTS of

	REGIMENT AND STATION OF 1872.	Date of Arrival from Station previously occupied.	REGIMENTAL STRENGTH.		Admission-rate of 1872 per 1,000 of the Average Strength.	INVALIDED.		DIED.		LOSS PER 1,000.	
			Number borne on the Rolls.	Average Strength present during 1872.		To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
18	9th Bengal Cavalry, Rawulpindee ...	November 1870, from Meean Meer	445	367	650·4	28	11	1		24·72	11·24
19	11th Native Infantry, Rawulpindee ...	April 1872, from Jullundur ...	706	627	657·1	8	10	6	2	14·16	11·33
20	23rd Native Infantry, Rawulpindee (at Hazara from April to October) ...	August 1868, from Abyssinia ...	702	641	647·4	4	27	3	1	38·46	5·70
21	25th Native Infantry, Rawulpindee (Detachment at Murree) ...	November 1870, from Peshawur ...	697	641	525·7	5	29	10	2	41·61	17·22
22	19th Native Infantry, Tallagunge ...	November 1871, from Peshawur ...	699	622	1147·9	11	3	2	2	4·29	5·72
23	10th Bengal Cavalry, Nowshera* ...	November 1871, from Sealkote ...	456	385	1630·4	18	2	1	1	4·39	4·39
24	30th Native Infantry, Nowshera* ...	October 1871, from Jhelum ...	695	583	1387·7	13	61	3	2	87·77	7·19
25	15th Bengal Cavalry, Peshawur* ...	December 1869, from Mooltan ...	455	390	1528·2	11	15	9	1	32·97	21·98
26	16th Bengal Cavalry, Peshawur* ...	October 1870, from Rawulpindee...	453	407	1560·2	3	3	10	...	6·62	22·08
27	15th Native Infantry, Peshawur* ...	December 1869, from Ferozepore..	698	616	1493·5	10	17	29	6	24·35	50·14
28	21st Native Infantry, Peshawur* ...	November 1870, from Meean Meer	697	600	870·8	23	2	12	2	2·87	20·09
29	26th Native Infantry, Peshawur* ...	November 1871, from Umballa ...	699	639	2250·6	4	43	15	1	61·52	22·89
30	36th Native Infantry, Peshawur* ...	December 1869, from Meerut ...	684	564	1709·5	13	3	20	3	4·39	33·62
		REGIMENTS OF THE PUNJAB ...	18,047	15,718	1470·6	312	510	231	76	28·26	17·01
		REGULAR NATIVE ARMY OF THE PRESIDENCY ...	44,516	38,721	1487·4	1,009	1,161	645	247	26·08	20·04

6.—*REGIMENTS of*

	REGIMENT AND STATION OF 1872.	Date of Arrival from Station previously occupied.	Number borne on the Rolls.	Average Strength present during 1872.	Admission-rate of 1872 per 1,000 of the Average Strength.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	Guide Corps, Murdan ...	Stationary ...	1,109	838	1361·6	6	18	4	2	16·23	5·41
2	Peshawur Mountain Train, Abbottabad† ...	April 1871, from Kohat ...	171	151	1755·0	4	3	3	2	17·54	29·29
3	4th Punjab Infantry, Abbottabad ...	December 1871, from Kohat ...	739	627	1275·9	12	16	10	6	21·65	21·65
4	5th Goorkhas, Abbottabad ...	Stationary ...	745	614	1205·5	8	18	13	4	24·16	22·82
5	4 Garrison Company, Kohat ...	Stationary ...	73	62	1435·5	2	7	...	1	95·89	13·70
6	Hazara Mountain Train, Kohat ...	March 1871, from Abbottabad ...	170	140	2292·9	5	5	4	...	29·41	23·53
7	1st Punjab Cavalry, Kohat ...	November 1871, from Bunnoo ...	484	396	1497·5	18	14	13	5	28·92	37·19
8	2nd Sikhs, Kohat ...	December 1871, from Bunnoo ...	733	648	2507·7	4	14	25	6	19·10	42·29
9	4th Sikhs, Kohat ...	February 1872, from Bunnoo ...	734	613	2031·0	30	9	24	9	12·26	44·96
10	3rd Punjab Infantry, Kohat ...	December 1871, from Abbottabad	727	607	2382·2	66	16	33	8	22·01	56·40
11	2nd Punjab Cavalry, Bunnoo (Edwardesabad) ...	January 1872, from Dera Ismael Khan ...	490	369	2330·7	11	4	5	2	8·16	14·28
12	3 Field Battery, Bunnoo ...	January 1872, from Dera Ismael Khan ...	102	90	3133·3	3	10	...	...	98·04	...
13	1st Sikhs, Bunnoo ...	February 1872, from Dera Ismael Khan ...	741	607	1870·4	19	18	9	5	24·29	18·89
14	1st Punjab Infantry, Bunnoo ...	December 1871, from Kohat ...	733	600	2031·2	9	9	11	4	12·28	20·46
15	3rd Punjab Cavalry, Dera Ghazee Khan ...	January 1872, from Rajanpore ...	489	395	2374·7	10	15	7	3	30·67	20·45
16	2nd Punjab Infantry, Dera Ghazee Khan ...	January 1872, from Kohat ...	732	617	1758·5	16	10	9	6	13·66	20·49
17	6th Punjab Infantry, Dera Ghazee Khan ...	March 1872, from Dera Ismael Khan ...	743	623	2102·7	12	6	4	2	8·08	8·08
18	2 Field Battery, Dera Ismael Khan ...	January 1872, from Bunnoo ...	107	91	2681·3	2	3	2	...	28·04	18·69
19	5th Punjab Cavalry, Dera Ismael Khan ...	February 1872, from Dera Ghazee Khan ...	491	377	1756·0	4	5	7	...	10·18	14·25
20	3rd Sikhs, Dera Ismael Khan ...	February 1872, from Dera Ghazee Khan ...	748	590	2079·7	17	9	14	7	12·03	28·08

* These Regiments furnished Detachments

† This Battery was attached to the Looshai Field Force

the PUNJAB—(continued).

	Total Admissions into Hospital, and Deaths in Hospital during the year.		Causes of Admissions into Hospital, and of Deaths in Hospital during the Year.																										
			Cholera.	Dengue.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Foot-sore.	All other Causes.
18	Admitted ...	242	...	...	83	8	18	...	..	...	...	...	2	7	...	11	2	11	...	...	4	..	1	5	3	35	40	1	5
	Died ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	...	...	1
19	Admitted ...	412	...	...	111	18	16	1	8	...	1	...	5	17	...	22	5	17	21	6	8	...	3	38	3	52	29	21	10
	Died ...	6	...	...	1	...	...	...	...	...	...	...	...	..	...	..	1	1	1	..	.	...	...	...	..	2	..	...	...
20	Admitted ...	415	...	...	155	17	24	1	3	...	...	...	5	28	..	20	4	30	2	..	8	...	3	6	...	28	44	10	18
	Died ...	3	...	...	...	...	...	...	1	...	...	...	..	...	...	1	...	1	..	...	.	...	...	...	..	...	...	...	...
21	Admitted ...	337	1	...	90	11	25	3	4	...	...	...	2	7	..	35	11	29	5	..	7	...	4	14	...	32	16	30	11
	Died ...	10	...	...	3	...	...	...	1	...	...	...	...	...	...	...	4	1	...	...	..	...	...	...	...	...	...	...	1
22	Admitted ...	714	...	...	296	13	31	...	8	...	1	...	3	11	6	21	4	63	13	...	38	...	3	18	..	77	41	47	20
	Died ...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	..	1	...	..	.	..	...	..	...	...	...	...	..	...
23	Admitted ...	630	1	...	440	4	8	...	8	...	...	...	1	8	...	6	2	35	1	1	8	...	1	3	3	49	46	..	5
	Died ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	.	...	...	...
24	Admitted ...	809	..	...	626	13	9	1	12	...	...	...	3	17	...	14	2	27	3	2	9	3	..	6	...	35	14	1	12
	Died ...	3	...	...	...	...	...	...	...	...	...	...	...	...	.	...	1		...	...	..	...	...	...	...	..	1	...	1
25	Admitted ...	596	6	...	356	2	22	...	7	1	...	...	3	22	...	6	8	60	7	...	4	2	7	2	1	27	45	...	8
	Died ...	9	3	...	...	...	...	...	...	...	...	...	...	...	...	1	2	1	1	..	...	...	...	...	..		1	..	...
26	Admitted ...	635	6	...	445	4	8	...	30	...	...	...	1	5	...	12	9	14	...	...	13	..	2	3	...	16	27	...	10
	Died ...	10	4	...	...	...	...	...	1	...	...	...	...	...	...	...	3	...	...	...	..	...	...	...	...	.	2	...	...
27	Admitted ...	920	13	...	464	15	25	1	30	1	3	2	4	18	...	15	42	144	5	...	10	...	2	5	..	59	30	23	9
	Died ...	29	8	..	2	...	...	1	2	1	1	1	...	...	..	1	2	8	..	..	.	...	..	...	..	...	1	...	1
28	Admitted ...	534	5	...	289	20	14	...	5	...	...	...	2	18	..	15	9	48	16	...	7	1	2	16	..	39	5	13	10
	Died ...	12	3	...	5	...	...	...	...	...	...	...	...	..	.	...	2	...	...	.	.	..	..	...	...	...	...	...	2
29	Admitted ...	1,412	4	...	1,070	18	9	1	72	...	...	...	2	20	.	30	11	88	8	1	4	...	1	3	..	49	16	33	2
	Died ...	15	2	...	3	...	...	...	..	...	...	..	...	...	...	3	2	4	1	.	...	...	...	...	...	..	...	..	...
30	Admitted ...	998	5	...	586	17	33	...	14	...	1	...	7	6	...	29	18	109	20	1	15	...	4	13	1	68	25	11	15
	Died ...	20	4	...	4	...	.	..	1	.	1	...	...	...	...	...	4	2	1		..		...	...	...	2	..	...	1
	Admitted ...	23,115	92	5	13,661	359	733	46	309	6	21	3	116	490	7	627	208	1,754	162	24	514	17	69	345	29	1,431	1,196	507	372
	Died ...	231	55	...	37	2	1	1	8	1	9	1	...	.	...	8	39	31	5	..	...	1	...	..	...	4	14	...	14
	Admitted ...	67,604	267	4542	27,063	1150	1897	134	816	10	100	14	311	1088	18	1745	418	5,435	444	89	1,075	45	233	1,090	83	3,557	3,010*	1721	1,209
	Died ...	645	181	...	86	2	1	7	25	2	37	5	...	.	3	43	77	75	11	5	...	3	..	...	...	5	46	...	31

the PUNJAB FRONTIER FORCE.

	Total Admissions into Hospital, and Deaths in Hospital during the year.		Cholera.	Dengue.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Foot-sore.	All other Causes.
1	Admitted ...	1,141	...	...	496	32	44	...	16	...	...	...	15	45	...	41	8	67	6	...	65	2	...	30	2	81	123	62	22
	Died ...	4	...	...	1	...	...	...	...	...	...	...	...	...	..	1	1	1	...	...	...	...	..	...	..	...	.	...	...
2	Admitted ...	265	2	...	84	...	15	1	1	...	...	...	10	2	...	19	2	28	2	1	15	1	1	5	.	30	36	4	6
	Died ...	3	1	...	1	...	...	...	...	..	...			...	...	1	...	...	...	...	...	...	...	...	..	...	...	...	...
3	Admitted ...	800	1	...	314	20	51	16	4	...	1	...	14	11	1	60	27	53	9	1	35	1	..	17	6	108	19	16	16
	Died ...	10	1	...	...	...	...	...	...	...	...	...	...	...	..	3	1	3	...	...	...	..	...	...	..	...	2	..	...
4	Admitted ...	777	...	...	314	16	34	...	1	...	8	...	7	36	1	40	13	36	12	3	28	2	3	18	.	60	59	75	21
	Died ...	13	...	..	1	...	...	...	...	...	3	1	...	...	...	2	2	...	.	1	...	1	...	...	...	...	...		2
5	Admitted ...	89	2	...	56	...	6	...	3	...	...	...	...	1	...	2	...	6	1	...	2	..	...	1	...	7	...	.	2
	Died ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.	..	...	...	...	.	...	..
6	Admitted ...	321	2	...	174	4	3	...	1	...	...	...	2	3	...	5	2	34	1	...	13	...	3	10	...	12	48	1	3
	Died ...	4	2	...	...	...	...	...	...	...	...	...	..	...	...	1	.	1	.	...	...	...	...	...	...	..	..	...	...
7	Admitted ...	593	12	...	270	12	10	2	4	...	...	1	6	8	...	10	8	86	8	1	23	..	1	8	4	60	47	...	7
	Died ...	13	8	...	2	...	...	...	...	...	...	1	...	...	...	...	1	1	...	..	...	..	...	...	..	...	...	..	...
8	Admitted ...	1,625	17	...	872	12	88	4	21	...	...	...	9	7	...	130	10	163	14	2	36	...	2	16	33	102	43	15	29
	Died ...	25	15	...	2	...	...	...	..	...	...	...	...	...	...	4	2	1	.	...	..		..	..		...	...	..	1
9	Admitted ...	1,215	16	...	709	5	32	3	15	...	2	...	6	9	...	47	10	156	20	1	35	..	2	13	10	60	40	27	18
	Died ...	24	11	...	5	...	...	...	2	...	..	...	...	...	...	1	4	1	...	...	...	...	...	..	...	...	...	...	...
10	Admitted ...	1,446	41	...	968	9	16	...	1	...	1	1	23	13	...	66	7	184	2	5	22	...	1	23	1	18	27	9	8
	Died ...	33	23	...	3	...	...	...	...	...	...	...	...	...	...	2	3	1	...	..	...	...	...	.	...	...	...	...	1
11	Admitted ...	860	...	...	443	10	24	..	2	...	...	...	2	14	...	12	1	73	7	...	23	..	2	18	22	98	97	3	9
	Died ...	5	...	...	3	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
12	Admitted ...	282	...	...	181	1	14	1	...	...	...	...	2	4	...	..	...	25	...	...	3	...	..	6	...	15	22	1	5
	Died ...	...	...	...	...	...	...	...	...	..	...	..	...	...	...	...	...	...	.	...	...	...	...	..	...	...	...		...
13	Admitted ...	1,139	...	...	774	10	27	...	10	...	...	2	5	12	...	10	8	97	22	...	11	1	2	15	18	83	22	5	5
	Died ...	9	...	...	2	..	...	..	. .	...	...	2	...	..	...	1	1	2	1	...	...	...	...	...	..	...	...	. .	...
14	Admitted ...	1,237	..	...	789	6	22		5	...	2	1	4	15	...	28	4	101	11	1	39	...	1	24	7	93	34	27	28
	Died ...	11	...	...	5	...	..	.	...	...	..	1	...	...	...	1	1	2	...	.	...	...	...	...	...	...	1	...	...
15	Admitted ...	938	...	...	513	4	33	...	...	...	...	...	1	5	...	13	8	54	1	..	26	6	1	8	1	150	104	...	6
	Died ...	7	...	.	...	...	..	...	...	...	...	...	...	..	...	1	2	2	...	.	...	..	...	...	...	...	...	...	...
16	Admitted ...	1,085	...	...	648	4	23	2	21	...	...	...	6	23	...	36	11	68	14	1	13	...	...	17	5	95	24	52	22
	Died ...	9	...	...	5	...	..	...	...	...	...	...	...	...	...	1	1	...	...	.	...	.	.	...	..	...	...	...	2
17	Admitted ...	1,310	...	...	908	10	17	...	2	...	...	...	5	13	...	15	15	90	13	2	31	..	3	12	27	83	40	4	20
	Died ...	4	...	...	...	...	...	...	...	...	...	1	...	...	...	1	2	...	..	...	...	...	...	...	.	...	...	...	...
18	Admitted ...	244	..	...	163	...	7	1	...	...	...	...	...	1	...	...	1	22	...	...	5	...	..	2	...	20	20	1	1
	Died ...	2	...	...	...	...	...	...	..	...	...	...	...	...	...	...	1	...	...	...	...		...	...	...	...	1		...
19	Admitted ...	662	...	...	388	3	7	...	4	...	1	...	5	6	...	2	7	49	18	...	4	...	...	12	3	68	77	11	7
	Died ...	7	...	...	2	...	. .	...	...	...	1	...	...	...	...	..	2	2	...	...	...	. .	...	...	...	...	...	...	...
20	Admitted ...	1,227	...	...	789	17	31	1	17	1	2	1	9	21	...	24	17	103	13	1	30	1	1	14	5	88	18	21	13
	Died ...	14	...	...	5	...	...	...	...	...	...	...	...	...	...	1	4	2	...	...	...	...	...	...	...	...	1	...	1

in the Frontier Posts during the year.
to the early months of the year.

1872.

TABLE

6—*REGIMENTS of the*

	Regiment and Station of 1872.	Date of Arrival from Station previously occupied.	Regimental Strength.			Invalided.		Died.		Loss per 1,000.	
			Number borne on the Rolls.	Average Strength present during 1872.	Admission-rate of 1872 per 1000 of the Average Strength.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
21	6th Punjab Infantry, Dera Ismael Khan ...	February 1872, from Dera Ghazee Khan.	749	602	1740·9	15	14	10	2	18·69	16·02
22	4th Punjab Cavalry, Rajanpore ...	December 1871, from Kohat ..	504	398	1655·8	30	11	7	1	21·82	15·87
	Regiments of the Punjab Frontier Force ...		12,314	10,064	1887·2	312	231	214	75	19·00	23·47

7—*REGIMENTS of the CENTRAL*

	Regiment and Station of 1872.	Date of Arrival from Station previously occupied.	Number borne on the Rolls.	Average Strength present during 1872.	Admission-rate of 1872 per 1000 of the Average Strength.	To their homes for change of air.	For Discharge.	With the Regiment.	Absent from the Regiment.	By Invaliding for Discharge.	By Deaths.
1	1st Central India Horse, Augur, with Detachments ...		490	285	329·8	6	15	5	1	30·61	12·24
2	2nd Central India Horse, Goonah	„ ...	489	321	579·4	4	12	1	1	24·54	4·09
3	Malwa Bheel Corps, Sirdarpore	„ ...	591	403	1173·7	4	24	5	1	40·61	10·15
4	Meywar Bheel Corps, Kherwarrah	„ ...	706	540	1488·9	...	16	6	3	22·66	12·75
5	Mairwarra Battalion, Ajmere	„ ...	670	576	1388·9	62	42	12	2	62·69	20·00
6	Bhopal Battalion, Sehore	„ ...	912	773	1326·0	26	19	8	11	20·83	20·83
7	Erinpoorah Force, Erinpoorah	„ ...	874	755	829·1	1	24	6	1	27·46	8·01
8	Deolee Force, Deolee	„ ...	877	809	1000·0	3	3	13	...	3·42	14·82
	Regiments of the Central India Irregular Force ...		5,609	4,462	1079·6	106	155	56	20	27·63	13·55

STATEMENT SHOWING THE GAIN AND LOSS IN STRENGTH

Present with their Regiments on 1st January 1872	44,086
At their homes on Furlough	141
At their homes on Sick Leave	340
Remaining sick in the Hospitals of other Regiments	109
Total Strength on 1st January 1872 ...	44,685

Additions of the Year.

Transfers received from other Regiments	12
Recruits received during the year	3,651
Deserters rejoined	2
Total Gain ...	3,665

ANNUAL RELIEF OF THE

CAVALRY REGIMENTS.

11th Bengal Cavalry	From Allahabad	To Meean Meer	Arrived	December 1872.
12th Bengal Cavalry	„ Umballa	„ Peshawur	Arrived	„ „
13th Bengal Cavalry	„ Lucknow	„ Mooltan	Arrived	January 1873.
15th Bengal Cavalry	„ Peshawur	„ Umballa	Arrived	April 1873.
18th Bengal Cavalry	„ Meean Meer	„ Allahabad	Arrived	March 1873.
19th Bengal Cavalry	„ Mooltan	„ Lucknow	Arrived	February 1873.

INFANTRY REGIMENTS.

1st Native Infantry	From Agra	To Goruckpore	Arrived	November 1872.
3rd Native Infantry	„ Meerut	„ Cachar	Arrived	„ „
4th Native Infantry	„ Cachar	„ Bhaugulpore...	Arrived	December 1872.
5th Native Infantry	„ Benares	„ Meerut	Arrived	November 1872.
8th Native Infantry	„ Alipore	„ Fyzabad	Arrived	January 1873.
12th Native Infantry	„ Sealkote	„ Peshawur	Arrived	February 1873.

PUNJAB FRONTIER FORCE—(concluded).

	Total Admissions into Hospital, and Deaths in Hospital during the year.	Causes of Admissions into Hospital, and of Deaths in Hospital during the Year.																										
		Cholera.	Dengue.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Foot-sore.	All other Causes.
21	Admitted ... 1,048	1	...	711	17	22	3	2	...	2	...	10	20	1	16	15	81	14	3	19	1	...	13	6	55	19	6	8
	Died ... 10	1	...	3	...	...	...	...	...	.	...		...	...	1	4	1		...	...	...	...	.	...	..		...	...
22	Admitted ... 659	...	...	371	3	24	1	6	.	1	...	1	7	...	10	6	15	4	1	8	.	1	4	4	87	92	3	7
	Died ... 7	..	...	2	.	...	.	.	...	1	...			..	...	2	2	...	...	...	...	...	.	..	..	...	..	...
	Admitted .. 18,993	94	..	10,927	195	[illegible]	35	135	1	20	6	112	276	3	580	181	1,594	192	25	195	15	24	280	154	1,461	1,011	333	263
	Died ... 214	62	...	44		.	.	2	..	5	6	..	.	...	29	34	22	1	1	...	1	..	...		.	6		8

INDIA IRREGULAR FORCE.

	Total Admissions into Hospital, and Deaths in Hospital during the year.	Cholera.	Dengue.	Fevers.	Venereal Affections.	Rheumatism.	Scurvy.	Anæmia and Debility.	Dropsy.	Phthisis Pulmonalis.	Apoplexy and Sunstroke.	Neuralgic Affections.	Eye Diseases.	Heart Disease.	Bronchitis and Asthma.	Pneumonia and Pleurisy.	Dysentery and Diarrhœa.	Spleen Disease.	Hepatitis.	Diseases of the Digestive System.	Diseases of the Urinary System.	Diseases of the Generative System.	Scabies and Skin Diseases.	Guinea-worm.	Abscess and Ulcer.	Injuries.	Foot-sore.	All other Causes.
1	Admitted ... 91	...	.	35	1	1	1	..	.	...	1	...	4	..	2	1	19	..	...	...	...	...	..	5	3	16	...	2
	Died ... 5	..	..	1	..			.	...	.	1		.	...	..	1	2	..	..	...	.	..	...	...	...	..	.	..
2	Admitted ... 186	1	...	94	9	6	...	...	..	.	.	3	10	...	5	1	20	6	1	3	1	2	2	1	7	12	...	3
	Died ... 1	..	...	...	...	..				.	.	.	.	.	..	1	.		...	...	..	...	...	...	..	..	..	...
3	Admitted .. 473	...	..	219	8	11	.	1	..	...	..	..	26	...	11	12	26	4	..	...	.	5	9	52	32	31	18	8
	Died ... 5	..	...	...	..	.	..	.			.	...		...	1	2	1	1	..	...	..	...	...	..	...	...	.	...
4	Admitted ... 804	...	.	406	6	20		2		...	...	2	29	.	5	1	33	3	2	8	...	..	26	45	118	68	21	9
	Died ... 6	...	..	1	.		...	...	..	.	.		.	.		..	1	..	..	...	..	..	..		..	1	...	3
5	Admitted ... 800	...	..	313	29	62	.	20	1		...	7	43	..	11	25	35	11	2	21	2	1	14	36	95	43	...	19
	Died ... 12	..	..	1	.	..								..	.	5	4		.	..	.	...	...	...		..	...	2
6	Admitted ... 1,025	7		544	22	43	1	8	...	...	..	6	32	.	18	2	210	6	2	22	..	2	18	1	38	10	7	26
	Died ... 8	1	..	1	.			..			.	.	.	.	...	1	1	...	.	...	..	...	.	.		1	...	
7	Admitted ... 626	.	...	379	18	21	4	..	...	1	.	1	11	1	10	19	14	2	..	3	.	3	3	17	39	19	17	11
	Died ... 6	...	...	...	...		.	..	.	1		.	.	.	...	3		..	.	...	...	...	..	...	.	..	..	2
8	Admitted .. 809	...	...	297	26	29	..	7	1	..	.	1	52		79	18	17	4	.	14	...	2	17	24	86	66	46	23
	Died ... 13	..	...	4	.			..	...	..	.	..	.		1	1		.	.	.	..	.	..			..	.	1
	Admitted ... 4,817	8	...	2,287	119	196	6	40	2	1	1	20	240	1	111	87	371	35	7	71	3	15	89	181	418	265	109	101
	Died ... 66	4	...	8		.		...	...	1	1	.	..	...	..	17	9	1	...	...	..	...	...			2	..	8

OF THE REGULAR NATIVE ARMY OF BENGAL DURING 1872.

PERMANENT LOSS OF THE YEAR.

Deaths at Head-Quarters, at Outposts, and in Detachments	645
Deaths while on Furlough, &c.	70
Deaths while at home on Sick Leave	177
Total Deaths ..	892
Invalided for Discharge	1,161
Transfers given to other Regiments	27
Discharged otherwise	1,618
Desertions, struck off for bad conduct, &c....	413
Total Loss ..	4,141
Remaining on the Regimental Rolls on 31st December 1873	14,209

NATIVE ARMY, 1872-73.

INFANTRY REGIMENTS—*Continued.*

13th Native Infantry	From Fort William	To Benares	... Arrived	November 1872.
15th Native Infantry	„ Peshawur	„ Sealkote	. Arrived	February 1873.
18th Native Infantry	„ Goruckpore	„ Agra	.. Arrived	December 1872.
23rd Native Infantry	„ Huzara	„ Jhelum	... Arrived	February 1873.
28th Native Infantry	„ Ferozepore	„ Alipore	.. Arrived	January 1873.
29th Native Infantry	„ Jhelum	„ Peshawur	... Arrived	February 1873.
30th Native Infantry	„ Peshawur	„ Agra	... Arrived	March 1873.
37th Native Infantry	„ Bhaugulpore	„ Fort William	.. Arrived	November 1872.
38th Native Infantry	„ Fyzabad	„ Buxa	. Arrived	March 1873.
40th Native Infantry	„ Agra	„ Ferozepore	... Arrived	December 1872.
41st Native Infantry	„ Buxa	„ Lucknow	... Arrived	May 1873.

NATIVE TROOPS, 1872.

XVIII.

TABLE showing the SICKNESS and MORTALITY among the REGIMENTS of the MADRAS NATIVE ARMY serving in STATIONS of the BENGAL PRESIDENCY during the Year 1872, *and the prevalence of the principal Diseases in each Month of the Year.*

(Stations occupied—Dorundah, Nagode, Banda, Nowgong, Jubbulpore, and Saugor.)

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths in Hospital.																			
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.	Died out of Hospital.
January ...	3,543	108	30·5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
February ...	3,594	105	29·2	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
March ...	3,606	62	17·2	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...
April ...	3,502	61	17·8	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May ...	3,585	79	22·0	4	...	...	...	...	2	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
June ...	3,576	65	18·2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
July ...	3,566	65	18·2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
August ...	3,582	69	19·3	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
September ...	3,616	82	22·7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
October ...	3,655	80	21·9	4	...	...	...	...	1	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
November ...	3,401	77	22·3	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
December ...	3,515	59	16·8	3	...	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
						...	...	...	4	3	...	...	...	3	...	...	2	2	1	...	...	3	1	3	...
						Died per 1,000 of the Average Strength.																			
For the year ...	3,574	76	21·3	22	6·16	...	...	...	1·96		...	...	...	·84	...	...	·56	·56	·28	...	...	·84	·28	·84	...

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Cholera ...	...	...	...	...	...	...	...	1	...	...	...	...	1	·3	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dengue ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fever, Intermittent ...	179	98	56	61	56	73	87	67	146	190	122	76	1,214	339·7	·33
„ Remittent & Continued ...	...	...	3	1	3	...	1	...	4	...	2	...	14	3·9	21·43
Apoplexy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery ...	14	1	1	2	3	6	7	6	4	5	2	3	57	15·9	2·56
Diarrhœa ...	15	4	5	4	3	2	8	4	4	5	3	3	60	16·8	
Hepatitis ...	...	...	...	...	...	...	...	...	...	...	...	2	2	·6	...
Spleen Disease ...	...	...	...	...	...	1	...	...	...	...	1	...	2	·6	...
Respiratory Diseases ...	18	11	9	14	5	3	4	2	2	3	5	7	83	23·2	2·41
Phthisis Pulmonalis ...	1	...	...	...	2	2	2	...	...	...	...	...	7	2·0	14·29
Dropsy ...	...	2	...	...	...	...	...	...	1	...	...	...	3	·8	...
Scurvy ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rheumatism ...	27	19	8	12	8	9	13	7	11	6	8	7	135	37·8	·98
Venereal Diseases ...	6	2	3	3	2	3	2	2	4	2	6	2	37	10·4	
Eye Diseases ...	5	7	1	12	15	12	24	17	10	11	7	6	127	35·5	
Abscess and Ulcer ...	38	21	9	16	14	28	21	19	21	13	16	11	227	63·5	
Wounds and Accidents ...	22	18	17	10	8	10	12	20	9	10	14	12	162	45·3	
All other Causes ...	60	28	12	30	19	11	15	10	16	11	10	9	234	65·4	
	385	211	127	168	138	163	190	155	232	256	190	138	2,365		
	Admitted per 1,000 of the Average Strength in each Month.														
	108·7	58·7	35·2	46·8	38·5	45·6	55·0	43·3	64·2	70·0	56·6	39·3	661·7		

3. JAIL POPULATION, 1872.

JAILS OF THE BENGAL PRESIDENCY, 1872.

I.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION of the BENGAL PRESIDENCY during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	57,696	1,560	27·0	200	3·47	1	1	..	7	11	...	...	62	22	1	2	33	3	11	8	1	14	3	20
February ...	58,603	1,474	25·1	150	2·56	1	...	..	1	4	6	..	46	17	1	...	30	1	8	9	...	5	4	17
March ...	58,632	1,450	24·7	124	2·11	7	...	1	3	7	14	1	26	5	3	1	26	...	7	2	...	9	5	7
April ...	59,292	1,509	25·4	114	1·92	10	...	...	3	5	4	...	25	10	...	..	19	...	8	1	...	10	3	16
May ...	60,071	1,550	25·8	152	2·53	21	...	...	4	2	5	2	43	14	..	2	20	1	12	1	...	9	5	11
June ...	61,112	1,588	26·0	106	1·73	7	3	...	...	5	2	5	33	12	2	1	6	...	7	1	...	5	3	14
July ...	62,382	1,811	29·0	164	2·63	29	2	...	4	6	...	2	56	14	1		13	2	10	3	...	6	5	11
August ...	63,666	2,381	37·4	344	5·40	102	...	1	8	12	...	2	104	38	...	1	14	1	16	5	...	16	6	18
September ...	64,684	2,641	40·8	307	4·75	29	1	...	11	16	..	1	129	46	1	1	26	1	11	1	2	11	3	17
October ...	64,017	2,574	40·2	348	5·44	19	...	2	15	26	1	1	129	69	...	7	29	2	8	8	...	12	2	18
November ...	63,511	2,307	36·3	352	5·54	12	...	...	12	12	1	...	150	64	...	...	31	2	17	10	...	12	5	24
December ...	62,622	1,684	31·4	313	5·00	10	1	...	18	9	...	1	124	37	...	2	50	3	12	9	2	15	5	15
						248	8	4	86	115	33*	15	927	348	9	17	297	16	127	58	5	124	49	188
						Died per 1,000 of the Average Strength.																		
For the year ...	61,350	1,901	31·0	2,674	43·58	4·04	·13	3·88				·24	20·78		·15	·28	4·84	·26	2·07	·95	·08	2·02	·80	3·06

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
Dengue ...	...	...	1	44	80	146	163	217	299	114	22	5	1,121	18·3	..
Cholera	4	4	22	22	13	19	80	223	42	69	12	20	560	9·1	44·20
Smallpox	12	7	7	2	10	13	2	...	1	...	4	6	64	1·0	12·50
Enteric Fever .	...	1	2	...	3	2	...	1		3	2	1	15	·2	26·67
Fever, Intermittent ...	1,226	1,041	1,224	1,419	1,534	1,388	1,861	3,428	4,612	3,836	2,856	2,002	26,460	431·2	·33
„ Remittent and Continued ...	37	47	148	89	90	53	61	91	94	118	61	52	941	15·3*	15 73*
Apoplexy	...	...	1	1	2	13	6	3	1	1	1	...	29	·5	51 72
Dysentery	367	306	342	373	428	421	740	1,091	908	926	872	705	7,569	123·4	9·59
Diarrhœa	230	252	393	442	407	479	722	747	552	555	535	408	5,722	93·2	
Hepatitis	5	6	11	10	9	5	9	4	9	5	6	7	86	1·4	10·46
Spleen Disease ...	44	36	30	40	30	39	37	40	53	52	40	63	504	8·2	3·37
Respiratory Diseases ..	278	212	187	211	159	120	107	108	144	102	198	283	2,203	35·9	13·48
Phthisis Pulmonalis ...	19	27	25	13	13	18	19	11	18	19	22	17	221	3·6	57·47
Dropsy ..	14	11	9	6	14	6	17	10	18	14	19	12	150	2·5	38·67
Atrophy and Anæmia ..	61	48	35	44	44	47	59	69	72	74	64	67	654	10·7	18·96
Scurvy ..	3	5	4	8	8	13	12	16	28	15	23	27	162	2·6	3·09
Rheumatism... ...	98	91	99	86	84	120	97	92	99	93	97	79	1,135	18·5	1·57
Venereal Diseases ...	50	49	68	86	70	80	82	50	65	53	48	39	740	12·1	
Eye Diseases ...	24	36	43	98	95	72	82	68	64	71	57	38	748	12·2	
Abscess and Ulcer ...	406	378	421	480	539	593	716	572	501	419	357	402	5,784	94·3	
Wounds and Accidents ...	178	178	237	269	240	235	234	190	198	194	155	163	2,480	40·4	
All other Causes ...	312	298	413	465	519	487	506	558	432	435	392	409	5,226	85·2	
	3,358	3,036	3,722	4,208	4,421	4,375	5,612	7,016	8,330	7,258	5,833	4,805	62,574		
	Admitted per 1,000 of the Average Strength in each Month.														
	58·2	51·8	63·5	71·0	73·6	71·6	90·0	110·6	128·8	113·4	91·8	76·7	1019·8		

See Note to Table VII.

JAILS OF THE BENGAL PRESIDENCY, 1872.

II.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in LOWER BENGAL and in ASSAM during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths.																		
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	13,782	549	39·8	50	...	1	...	...	6	1	...	...	21	4	...	.	2	1	1	4	1	3	1	4
February ..	14,100	485	34·4	54	...	1	...	...		2	...	...	23	4	...	...	7	...	5	4	..	2	2	4
March ...	14,185	458	32·3	40	...	5	...	...	1	1	...	...	15	...	2	.	3	..	4	2	...	4	1	2
April ...	14,349	477	33·2	45	...	8	...	.	2	2	...	...	13	4	...	...	3	...	3	1	.	3	1	5
May ...	14,873	499	33·6	64	...	20	...	...	2	1	...	1	10	3	. .	1	5	1	4	...	...	2	2	3
June ...	15,450	528	34·2	49	...	5	...	...	...	1	...	2	20	2	2	...	4	...	4	...	...	1	2	6
July ...	15,533	649	41·8	69	...	12	1	...	..	2	...	2	35	6	...	...	3	1	1	1	...	2	1	2
August ...	15,580	688	44·1	75	...	2	...	1	1	2	. .	1	33	10	...	...	2	...	6	3	. .	5	1	8
September ...	15,505	641	41·3	76	...	...	1	...	3	4	...	1	30	12	. .	1	7	1	5	...	...	3	2	9
October ...	15,326	629	41·0	83	...	3	...	1	5	7	...	...	23	16	...	5	6	2	6	5	. .	1	2	1
November ...	15,360	640	41·7	73	...	4	...	...	6	3	...	...	21	13	...	...	7	1	5	5	...	2	2	4
December ...	15,086	605	40·1	64	...	10	...	...	3	2	...	...	21	10	...	1	4	...	2	4	1	2	1	3
						71	2	2	29	28	...	7	274	84	4	8	53	7	46	29	2	30	18	48
						Died per 1,000 of the Average Strength.																		
For the year ...	14,930	571	38·2	742	49·70	4·75	·14	3·95				·47	23·98		·27	·54	3·55	·47	3·08	1·94	·14	2·01	1·20	3·21

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ..	...	...	1	44	80	145	158	157	42	62	18	5	712	47·7	...
Cholera ..	3	4	18	18	41	14	26	6	4	5	6	20	165	11·1	43·03
Smallpox ..	1	...	...	.	...	2	...	...	1	...	...	...	4	·3	50·00
Enteric Fever	..	..	...	...	...	...	...	1	...	1	2	1	5	·3	40·00
Fever, Intermittent ..	463	342	300	482	560	399	502	612	651	711	704	698	6,654	445·7	·44
„ Remittent and Continued ...	4	8	7	11	9	11	17	25	11	29	20	10	162	10·8	17·28
Apoplexy	...	...	1	1	1	2	2	1	1	...	1	...	10	·7	70·00
Dysentery .	189	151	168	162	197	240	353	329	305	221	222	223	2,766	185·2	6·81
Diarrhœa ...	86	138	217	215	183	250	341	211	192	230	227	197	2,493	167·0	
Hepatitis .	1	2	5	1	5	2	1	2	5	4	1	4	33	2·2	12·12
Spleen Disease ...	24	26	15	21	16	20	28	21	33	29	22	38	296	19·8	2·70
Respiratory Diseases ...	40	38	41	36	85	44	31	39	41	45	62	68	527	35·3	10·06
Phthisis Pulmonalis ..	10	14	14	6	6	9	6	6	11	8	14	6	110	7·4	41·82
Dropsy ..	11	6	6	4	7	3	14	9	11	10	10	4	95	6·4	30·53
Atrophy and Anæmia .	11	20	9	14	18	11	21	19	17	20	8	11	179	12·0	16·76
Scurvy ...	3	3	1	4	4	6	8	7	13	2	19	8	78	5·2	2·56
Rheumatism .	35	32	33	31	20	43	44	30	43	34	47	32	439	29·4	1·78
Venereal Diseases ...	13	15	15	21	22	29	28	12	23	13	14	10	215	14·4	
Eye Diseases ..	11	11	9	19	16	13	12	9	14	7	13	9	143	9·6	
Abscess and Ulcer ..	80	78	79	92	77	78	97	81	82	61	53	63	921	61·7	
Wounds and Accidents .	48	43	48	53	59	58	55	47	47	51	30	35	574	38·4	
All other Causes ...	100	93	120	151	180	144	155	200	174	181	159	150	1,807	121·0	
	1,142	1,022	1,197	1,389	1,535	1,529	1,959	1,830	1,721	1,760	1,712	1,602	18,388		
	Admitted per 1,000 of the Average Strength in each Month.														
	82·9	72·5	84·4	96·8	103·2	99·0	126·1	117·4	111·0	114·8	111·5	105·6	1231·6		

JAILS OF THE BENGAL PRESIDENCY, 1872.

III.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in CHOTA NAGPORE and in the DINAPORE, BENARES, OUDE, and CAWNPORE DISTRICTS during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	19,438	472	24·3	71	...	...	1	.	...	3	...	...	24	8	...	1	6	1	6	3	...	7	...	11
February ...	20,000	466	23·3	44	..	...	..	...	...	1	1	...	14	6	1	..	9	...	1	4	...	...	2	5
March ...	20,188	459	22·7	34	...	...	.	1	2	2	...	...	5	3	...	...	9	...	...	...	...	4	4	4
April ...	20,380	492	24·1	37	...	2	...	...	1	.	...	..	6	3	...	...	7	...	4	...	...	6	...	8
May ...	20,426	480	23·5	56	...	1	.	...	2	...	1	1	17	9	...	...	7	...	7	1	...	4	2	4
June ...	20,960	477	22·8	35	...	1	3	...	..	2	1	..	9	6	...	1	1	...	3	1	..	2	...	5
July ...	21,674	545	25·1	60	...	13	1	...	3	4	..	..	13	5	1	...	5	...	4	1	...	2	2	6
August ...	22,306	722	32·4	174	...	67	...	..	2	1	...	1	54	22	..	..	3	1	9	1	..	7	1	5
September ...	22,992	783	34·1	103	...	9	...	...	...	1	...	...	54	16	.	..	4	...	3	1	.	6	1	8
October ...	22,861	732	32·0	121	...	13	...	.	...	4	1	...	61	20	...	1	10	...	2	2	..	4	...	3
November ...	22,782	690	30·3	137	...	8	..	...	2	1	1	...	64	28	..	...	9	1	8	2	..	3	2	13
December ...	22,702	574	25·3	108	...	...	1	...	1	2	...	1	49	16	...	...	10	2	8	1	...	5	4	8
						114	6	1	13	21	5	3	370	137	2	3	80	5	55	17	...	50	18	80
						Died per 1,000 of the Average Strength.																		
For the year ...	21,393	574	26·8	980	45·81	5·33	·28	1·87				·14	23·70		·09	·14	3·74	·23	2·57	·80	...	2·34	·84	3·74

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
Dengue ...	...	..	...	..	...	...	5	23	27	27	4	...	86	4·0	...
Cholera ..	1	...	2	4	2	4	40	136	10	63	6	...	268	12·5	42·54
Smallpox ..	7	4	4	2	9	9	2	..	..	...	4	6	47	2·2	12·77
Enteric Fever ...	..	1	1	...	...	2	..	...	...	...	..	...	4	·2	...
Fever, Intermittent ...	320	276	364	427	383	394	429	624	827	743	557	339	5,683	265·7	·23
„ Remittent and Continued ...	4	6	12	4	7	9	18	8	15	17	7	9	116	5·4	22·41
Apoplexy ..	...	...	..	...	1	1	...	1	...	..	...	...	3	·1	100·00
Dysentery ...	119	87	89	120	127	92	195	425	330	326	360	231	2,501	116·9	12·28
Diarrhœa ..	80	68	115	95	109	130	208	242	164	167	166	85	1,629	76·2	
Hepatitis ...	2	3	4	2	1	3	5	1	2	1	4	2	30	1·4	6·67
Spleen Disease ...	8	3	8	8	6	13	3	7	4	4	3	5	72	3·4	4·17
Respiratory Diseases ...	65	76	47	35	24	18	23	13	30	52	36	33	452	21·1	17·70
Phthisis Pulmonalis ..	4	7	9	6	6	5	8	4	3	8	6	5	71	3·3	77·46
Dropsy ...	2	3	1	2	4	2	2	...	4	4	2	6	32	1·5	53·12
Atrophy and Anæmia ...	28	20	19	15	12	15	20	24	27	18	14	15	227	10·6	22·08
Scurvy ...	...	2	...	1	...	1	...	..	2	...	...	...	6	·3	...
Rheumatism ...	26	21	29	18	17	28	20	24	19	27	19	21	269	12·6	1·88
Venereal Diseases ...	13	15	26	27	17	15	32	12	18	13	21	11	219	10·2	
Eye Diseases ...	2	11	10	37	33	24	34	22	24	19	18	12	246	11·5	
Abscess and Ulcer ...	119	108	139	173	172	204	255	263	194	180	119	148	2,083	97·4	
Wounds and Accidents ...	63	70	119	129	103	94	79	88	91	91	69	78	1,081	50·6	
All other Causes ...	103	100	131	134	163	138	156	136	110	105	90	125	1,496	69·9	
	957	890	1,128	1,239	1,196	1,201	1,533	2,053	1,910	1,874	1,511	1,129	16,621		
	Admitted per 1,000 of the Average Strength in each Month.														
	49·2	44·5	55·9	60·8	58·5	57·3	70·8	92·0	83·1	82·0	66·3	49·8	777·0		

JAILS OF THE BENGAL PRESIDENCY, 1872.

IV.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the CENTRAL PROVINCES, excluding JUBBULPORE and SAUGOR, during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	2,035	93	45·7	5	.	...	...	...	1	...	..	...	...	1	...	.	1	...	..	...	...	2	...	...
February ...	2,035	78	38·3	3	..	...	...	.	.	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1
March ...	2,006	66	32·9	3	.	2	...	...	...	...	...	...	1	.	...	...	.	..	.	...	...	...	...	...
April ..	2,010	62	30·8	2	.	...	.	.	.	1	.	..	1	.	..	...	..	...	...	...	..	..	...	...
May ...	1,999	77	38·5	5	.	.	...	...	..	1	..	.	1	1	..	1	..	...	...	...	...	1	...	...
June ...	2,020	67	33·2	4	.	1	..	.	...	...	..	.	...	2	...	.	...	...	...	...	...	1	...	...
July ...	2,007	78	38·9	5	...	.	...	..	.	..	...	...	3	...	...	...	1	...	...	...	...	1	...	...
August ...	2,021	110	54·4	7	.	1	..	...	1	...	...	.	1	.	...	...	1	...	1	...	...	1	1	...
September ..	2,078	136	65·5	13	...	...	..	..	1	.	..	.	5	2	..	...	...	...	1	...	1	2	...	1
October ...	2,063	102	49·5	16	..	.	...	...	1	1		...	2	6		1	2	...	...	...	...	3	...	...
November ...	2,037	89	43·7	1	..	...	...	.	.	...	..	...	...	...	.	.	...	...	.	...	...	1	...	...
December ...	2,030	74	36·3	8	...	...	.	...	2			..	2	..	...	1	...	...	...	2	...	1	...	...
						4	..	...	6	3	...	...	16	13		3	5	...	2	3	1	13	1	2
						Died per 1,000 of the Average Strength.																		
For the year ...	2,029	86	42·4	72	35·49	1·97	...	4·44				..	14·29		...	1·48	2·46	..	·99	1·48	·49	6·41	·49	·99

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
Dengue ...	...	...	...	...	...	...	...	..	...	..	..	..	...	...	..
Cholera ...	...	...	2	...	...	1	...	2	...	...	...	...	5	2·4	80·00
Smallpox ...	...	...	.	...	..	...	...	...	...	..	...	...	...	...	...
Enteric Fever ..	...	...	...	...	.	...	..	...	..	..	...	...	...	...	...
Fever, Intermittent ...	107	56	67	61	76	51	65	118	318	228	148	79	1,374	677·2	·44
" Remittent and Continued ..	1	2	3	2	1	2	2	1	7	3	2	1	27	13·3	11·11
Apoplexy ...	...	...	..	...	...	...	...	..	...	...	...	..	...	...	..
Dysentery ..	9	12	19	13	15	15	48	59	37	27	17	10	281	138·5	5·68
Diarrhœa ...	8	5	11	15	7	8	33	60	42	18	11	12	230	113·4	
Hepatitis ...	...	...	...	1	1	...	1	...	...	...	..	...	3	1·5	..
Spleen Disease ..	...	1	1	2	2	...	...	1	1	2	3	1	14	6·9	21·43
Respiratory Diseases ...	18	12	5	5	8	4	6	4	11	7	1	8	89	43·8	5·62
Phthisis Pulmonalis ..	...	...	...	...	...	...	1	...	..	...	...	...	1	·5	...
Dropsy ...	...	1	...	...	...	...	...	...	..	.	2	2	5	2·4	60·00
Atrophy and Anæmia ..	1	..	..	...	1	5	2	4	9	3	5	3	33	16·3	39·39
Scurvy ...	..	...	...	...	...	1	2	3	9	5	1	13	34	16·8	2·94
Rheumatism ..	14	8	8	6	18	8	4	9	9	6	10	4	104	51·3	·28
Venereal Diseases ...	5	6	4	5	2	3	2	3	2	2	.	1	35	17·3	
Eye Diseases ..	1	...	3	2	...	2	1	9	6	6	2	3	35	17·3	
Abscess and Ulcer ...	36	32	34	42	50	53	48	39	48	20	40	41	483	238·0	
Wounds and Accidents ...	13	7	14	9	10	8	18	14	18	11	4	5	134	66·0	
All other Causes ...	28	19	27	24	28	22	21	41	19	23	19	18	289	142·4	
	241	161	198	187	219	183	254	367	536	364	265	201	3,176		
	Admitted per 1,000 of the Average Strength in each Month.														
	118·4	79·1	98·7	93·0	109·6	90·6	126·6	181·6	257·9	176·5	130·1	98·6	1565·3		

JAILS OF THE BENGAL PRESIDENCY, 1872.

V.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the AGRA DISTRICT and in CENTRAL INDIA during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhoea.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	3,142	83	26·4	14	...	...	...	...	...	2	...	..	2	2	...	...	5	1	...	...	...	...	1	1
February ...	3,134	73	23·3	8	...	...	...	...	...	...	...	...	1	1	...	...	4	...	...	...	...	...	...	2
March ...	3,201	66	20·6	3	...	...	...	...	...	...	..	...	2	...	...	...	1	...	...	...	...	...	...	...
April ...	3,267	58	17·8	5	...	...	..	...	...	...	...	...	...	2	...	...	1	...	...	.	...	1	...	1
May ..	3,249	64	19·7	4	...	...	...	...	.	...	...	...	...	...	...	...	...	..	1	...	...	1	...	2
June .	3,285	82	25·0	6	..	..	...	...	...	...	...	1	2	...	...	.	...	...	...	...	...	1	1	1
July ...	3,381	83	24·5	4	...	...	...	...	...	...	...	...	1	...	...	.	...	..	1	...	...	1	...	1
August ...	3,483	106	30·4	15	...	...	...	...	...	...	...	...	6	1	..	1	2	...	...	1	...	1	...	3
September ...	3,629	157	43·3	11	...	..	...	...	...	..	...	...	5	2	...	...	3	...	1	...	...	...	...	...
October ...	3,689	150	40·7	11	...	...	...	1	...	1	...	...	3	2	...	...	1	...	...	...	...	...	...	3
November .	3,715	123	33·1	14	...	...	...	...	...	...	...	...	12	...	...	...	...	...	...	...	...	...	...	2
December ...	3,709	111	30·0	12	...	...	...	..	...	...	...	...	10	1	...	...	...	...	...	...	...	1	...	...
						...	...	1	...	3	...	1	44	11	...	1	17	1	3	1	...	6	2	16
						Died per 1,000 of the Average Strength.																		
For the year ...	3,407	96	28·2	107	31·41	...	...	1·18				·29	16·15		...	·29	4·99	·29	·88	·29	...	1·76	·59	4·70

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
Dengue ...	..	..	...	...	...	.	...	67	215	21	...	...	303	88·9	...
Cholera ...	...	...	...		...	...	1	..	1	...	...	...	2	·6	...
Smallpox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever .	...	...	...	...	...	...	...	...	...	2	...	...	2	·6	...
Fever, Intermittent ...	26	40	53	61	64	67	64	128	221	173	60	33	999	293·2	...
,, Remittent and Continued	4	1	4	1	5	4	..	...	2	1	...	...	22	6·4	13·63
Apoplexy .	...	...	...	..	...	2	...	...	...	...	...	...	2	·6	50·00
Dysentery ..	8	...	6	6	10	21	29	49	40	34	47	60	310	91·0	11·11
Diarrhœa ...	8	3	5	6	14	9	23	46	24	33	13	1	185	54·3	
Hepatitis ..	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
Spleen Disease	3	...	...	..	...	...	...	1	1	2	...	2	9	2·6	11·11
Respiratory Diseases ...	27	12	14	18	7	12	9	5	13	17	4	21	159	46·7	10·69
Phthisis Pulmonalis ...	...	...	1	...	...	...	1	1	2	1	...	..	6	1·8	50·00
Dropsy ...	..	...	...	...	..	...	...	1	...	..	...	..	1	·3	...
Atrophy and Anæmia ...	1	...	...	1	3	...	2	...	...	1	...	1	9	2·6	66·67
Scurvy ...	.	...	...	...	1	1	2	3	...	8	...	...	15	4·4	...
Rheumatism ..	5	3	7	2	1	5	5	1	1	5	2	6	43	12·6	1·65
Venereal Diseases ...	8	7	5	2	3	7	7	5	3	6	2	1	56	16·4	
Eye Diseases ..	4	2	2	2	9	2	4	6	3	6	4	3	47	13·8	
Abscess and Ulcer ...	14	18	14	22	34	61	57	30	40	34	26	26	366	107·4	
Wounds and Accidents	6	3	1	11	4	17	6	2	6	4	9	6	75	22·0	
All other Causes ...	18	13	15	18	26	17	25	36	21	28	24	22	263	77·2	
	132	102	127	150	181	215	235	381	593	376	200	182	2,874		
	Admitted per 1,000 of the Average Strength in each Month.														
	42·0	32·6	39·7	45·9	55·7	65·4	69·5	109·4	163·4	101·9	53·8	49·1	843·4		

JAILS OF THE BENGAL PRESIDENCY, 1872.

VI.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the ROHILCUND and MEERUT DISTRICTS during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	CAUSES OF DEATHS. Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	5,741	150	26·1	30	...	...	...	.	...	1	.	...	12	5	..	1	9	...	1	...	...	...	...	1
February ...	5,886	148	25·1	17	..	...				1	...	...	8	4		..	2	...	1	...	...	1	...	...
March ...	5,905	139	23·5	11	...	...	...	.	..	1	.	...	2	.	...	1	4	.	1	...	...	1	...	1
April ...	6,042	155	25·6	12	..	..			...	..		.	4	1			5	..	1	.	...	...	..	1
May .	6,214	165	26·6	8	...	...		..	...	...	...	...	2	...	...		4	...		..	.	1	...	1
June ...	6,086	149	24·5	4	...	...	..		..	1	..	.	2	...	.	..				...	...	...	..	1
July ...	6,192	150	24·2	9	...	1	..	..	..	..	..	.	3	1		..	1	.	1	1	...	...	...	1
August ...	6,296	234	37·2	22	...	5	..	...	2	...	..	..	3	5			4	.	.	...	...	1	1	1
September ...	6,268	324	51·7	47	..	10	...	.	5	..	...	...	19	6			6	..	.	...	...	...	...	1
October ...	6,207	307	49·5	53	...	2	..		2	3	..		27	14	..		1	.	...	...	...	3	...	1
November ...	6,175	217	35·1	52	...	...	..	..	...	.		...	26	16	...		4	.	2	1	...	2	...	1
December ...	6,047	164	27·1	42	. .	...	...	...	1	2	..	...	22	4	..		3	.	...	1	1	5	...	3
						18	.	...	10	9	.	..	130	56	..	2	43	..	7	3	1	14	1	13
						Died per 1,000 of the Average Strength.																		
For the year ...	6,088	192	31·5	307	50·13	2·96	...	3·12				...	30·55		..	·33	7·06	...	1·15	·50	·16	2·30	·16	2·14

CAUSES OF ADMISSIONS.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH. Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
Dengue ...	...	...	..	...	...	1	...	...	12	1	...	...	14	2·3	...
Cholera ..	...	...	...	...	...	...	3	6	20	...	...	...	29	4·8	62·07
Smallpox	...	...	...	...	1	1	...	...	..	...	...	...	2	·3	...
Enteric Fever .	..	...	...	..	3	...	...	...	...	...	. .	.	3	·5	...
Fever, Intermittent ...	79	57	76	108	154	129	245	559	583	338	186	108	2,622	430·7	·38
„ Remittent and Continued ...	10	10	14	16	14	11	15	28	19	9	6	16	168	27·6	5·36
Apoplexy ...	..	...	...	...	...	...	2	...	...	...	...		2	·3	...
Dysentery ...	24	18	14	30	20	12	34	90	116	138	68	69	633	104·0	19·50
Diarrhœa .	28	14	12	24	23	12	21	56	45	33	31	22	321	52·7	
Hepatitis ...	...	...	1	...	...	..	...	...	...	...	...	..	1	·2	...
Spleen Disease ...	5	3	2	3	1	1	1	3	3	2	1		25	4·1	8·00
Respiratory Diseases ...	41	25	22	34	22	15	12	13	21	18	15	22	260	42·7	16·54
Phthisis Pulmonalis ..	1	1	..	1	...	1	...	...	2	1	1	.	8	1·3	87·50
Dropsy ..	...	..	1	...	3	...	...	...	...	...	1	..	5	·8	60·00
Atrophy and Anæmia ..	4	6	4	6	5	7	4	6	11	18	12	15	98	16·1	14·29
Scurvy ..	...	..	1	...	...	...	...	...	...	...	. .	...	1	·2	...
Rheumatism ..	4	11	6	5	8	13	7	6	11	7	9	9	96	15·8	·89
Venereal Diseases ..	5	1	5	14	13	8	5	11	6	5	5	3	80	13·1	
Eye Diseases ..	3	3	2	17	10	7	8	3	3	18	13	8	95	15·6	
Abscess and Ulcer ..	89	71	62	58	69	74	75	51	53	40	45	38	725	119·1	
Wounds and Accidents ..	20	20	29	28	22	26	37	20	14	14	13	13	256	42·1	
All other Causes ...	17	18	26	30	30	35	31	35	25	25	25	18	315	51·7	
	330	258	277	374	398	353	500	887	943	667	431	341	5,759		
	Admitted per 1,000 of the Average Strength in each Month.														
	57·4	43·8	46·9	61·9	64·0	58·0	80·7	140·9	150·4	107·4	69·8	56·4	946·0		

JAILS OF THE BENGAL PRESIDENCY, 1872.

VII.

TABLE showing the SICKNESS and MORTALITY among the JAIL POPULATION in the PUNJAB during the Year 1872, and the prevalence of the principal Diseases in each Month of the Year.

MONTHS.	Average Strength.	Average Number Daily Sick.	Number Daily Sick per 1,000 of Strength.	Number of Deaths.	Died per 1,000 of Strength.	Causes of Deaths.																			
						Cholera.	Smallpox.	Enteric Fever.	Fever, Intermittent.	Fever, Remittent.	Fever, Continued.	Apoplexy.	Dysentery.	Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.
January ...	13,558	213	15·7	30	...	...	...	...	...	4	...	...	3	2	1	...	10	...	3	1	...	2	1	3
February ...	13,448	224	16·7	24	...	...	...	...	1	...	5	...	...	1	.	...	8	1	1	...	...	2	...	5
March ...	13,147	262	19·9	33	.	...	...	...	.	3	14	1	1	2	1	...	9	...	2	...	...	...	...	...
April ...	13,238	265	20·0	13	...	...	...	...	...	2	4	...	1	...	...	...	3	...	...	...	...	...	2	1
May ...	13,310	265	19·9	15	...	...	...	...	...	...	4	...	4	1	...	...	4	...	...	...	...	...	1	1
June ...	13,311	285	21·4	8	...	...	...	...	...	1	1	2	...	2	...	...	1	...	...	...	...	...	...	1
July ...	13,596	306	22·5	17	...	3	..	...	1	...	...	...	1	2	...	...	3	1	3	...	...	...	2	1
August ...	13,971	521	37·3	51	...	27	...	...	2	9	...	...	7	..	...	...	2	...	...	...	...	1	2	1
September ...	14,212	600	42·2	57	...	10	...	.	2	11	...	...	16	8	1	...	6	...	1	...	1	...	...	1
October ...	13,871	654	47·1	64	...	1	...	...	7	10	...	1	13	11	...	...	9	...	...	1	...	1	...	10
November ...	13,442	548	40·8	75	...	...	...	...	4	8	...	...	27	12	...	..	11	...	2	2	...	4	1	4
December ...	13,039	436	33·4	79	..	...	...	...	11	3	...	...	20	6	...	...	33	1	2	1	...	1	...	1
						41	...	...	28	51	28*	4	93	47	3	...	99	3	14	5	1	11	9	29
						Died per 1,000 of the Average Strength.																		
For the year ...	13,512	382	28·3	466	34·49	3·03	..		7·92			·30	10·36		·22	...	7·33	·22	1·04	·37	·08	·81	·67	2·14

CAUSES OF ADMISSIONS.	Number of Admissions into Hospital in each Month.												Total Admitted during the Year.	Admitted per 1,000 of Strength.	Died out of each hundred cases treated.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			
Dengue ..	...	...	...	...	.	...	...	...	3	3	...	...	6	·4	
Cholera ...	...	...	...	...	...	...	10	73	7	1	..	...	91	6·7	45·06
Smallpox ..	4	3	3	...	...	1	..	..	...	...	...	...	11	·8	
Enteric Fever ...	...	...	1	...	...	...	...	...	...	..	..	...	1	·1	...
Fever, Intermittent ...	231	273	274	280	307	348	496	1,387	2,042	1,613	1,132	745	9,128	675·6	·31
" Remittent and Continued ...	14	20	108	55	54	16	9	29	40	59	26	16	446	33·0	17·71†
Apoplexy ...	...	...	...	...		8	2	1	..	1	...	...	12	·9	33·33
Dysentery ...	27	38	46	42	59	35	81	139	161	180	158	112	1,078	79·8	7·21
Diarrhœa ...	20	24	33	87	71	70	96	132	85	68	87	91	864	63·9	
Hepatitis ...	2	1	1	6	2	...	2	1	2	...	1	1	19	1·4	15·79
Spleen Disease ...	4	3	4	3	5	5	5	7	11	13	11	17	88	6·5	...
Respiratory Diseases ..	78	51	58	83	63	33	26	32	28	53	80	131	716	53·0	13·83
Phthisis Pulmonalis ...	4	5	1	...	1	3	3	...	..	1	1	6	25	1·9	56·00
Dropsy ...	1	1	1	...	...	1	1	...	3	...	4	..	12	·9	41·67
Atrophy and Anæmia ...	6	2	3	8	5	9	10	6	8	14	15	22	108	8·0	10·19
Scurvy ...	...	...	2	3	3	4	...	3	4	...	3	6	28	2·1	...
Rheumatism ...	14	16	16	24	11	23	17	16	16	14	10	7	184	13·6	1·31
Venereal Diseases ...	6	5	14	17	13	18	8	7	14	14	6	13	135	10·0	
Eye Diseases ...	3	9	17	21	27	24	23	19	14	15	7	3	182	13·5	
Abscess and Ulcer ...	68	71	93	93	137	133	184	108	84	75	74	86	1,206	89·3	
Wounds and Accidents	28	26	26	39	42	32	39	28	22	20	30	28	360	26·6	
All other Causes ...	46	55	94	108	92	131	119	110	83	73	69	76	1,056	78·1	
	556	603	795	869	892	894	1,131	2,008	2,627	2,217	1,714	1,360	15,756		
	Admitted per 1,000 of the Average Strength in each Month.														
	41·0	44·8	60·5	65·6	67·0	67·2	83·2	150·2	184·8	159·8	127·5	104·3	1166·1		

---

* Deaths from Contagious Relapsing Fever which occurred in the Umritsur Jail. During the same period, there were 201 admissions from this fever, occurring as follows:—January 1, February 16, March 94, April 47, May 38, and June 5.

† The Ratio for Relapsing Fever is 13·93.

JAILS OF THE BENGAL PRESIDENCY 1872.

VIII.

COMPARATIVE STATEMENT of the RATIOS of SICKNESS and MORTALITY among the JAIL POPULATION of th various PROVINCES of the BENGAL PRESIDENCY.

	Ratio per 1,000 of the Average Strength						
	Bengal Proper and Assam.	Gangetic Provinces and Oude.	Central Provinces (excluding Saugor and Jubbulpore).	Agra and Central India.	Rohilcund and Meerut.	Punjab.	Bengal Presidency
1.—Average Daily Sick-rate of each Month.							
January .	39·8	24·3	45·7	26·4	26·1	15·7	27·0
February .	34·4	23·3	38·3	23·3	25·1	16·7	25·1
March ..	32·3	22·7	32·9	20·6	23·5	19·9	24·7
April ..	33·2	24·1	30·8	17·8	25·6	20·0	25·4
May .	33·6	23·5	38·5	19·7	26·6	19·9	25·8
June ..	34·2	22·8	33·2	25·0	24·5	21·4	26·0
July ..	41·8	25·1	38·9	24·5	24·2	22·5	29·0
August ...	44·1	32·4	54·4	30·4	37·2	37·3	37·4
September .	41·3	34·1	65·5	43·3	51·7	42·2	40·8
October ...	41·0	32·0	40·5	40·7	49·5	47·1	40·2
November ..	41·7	30·3	48·7	33·1	35·1	40·8	36·3
December ...	40·1	25·3	36·3	30·0	27·1	33·4	31·4
Average of the Year ...	38·2	26·8	42·4	28·2	31·5	28·3	31·0
2.—Composition of the Admission-rate of the Year.							
Dengue ..	47·7	4·0	...	88·0	2·3	·4	18·3
Cholera ...	11·1	12·5	2·4	·6	4·8	6·7	9·1
Smallpox .	·3	2·2	...		·3	·8	1·0
Fevers .	456·8	271·3	690·5	300·2	458·8	708·7	446·7
Apoplexy ..	·7	·1	...	·6	·3	·9	·5
Dysentery and Diarrhœa ...	352·2	193·1	251·9	146·3	150·7	143·7	216·6
Hepatitis ...	2·2	1·4	1·5	...	·2	1·4	1·4
Spleen Disease ..	19·8	3·4	6·9	2·6	4·1	6·5	8·2
Respiratory Diseases ...	35·3	21·1	43·8	46·7	42·7	53·0	35·9
Phthisis Pulmonalis ..	7·1	3·3	·5	1·8	1·3	1·9	3·6
Dropsy ...	6·4	1·5	2·4	·3	·8	·9	2·5
Atrophy and Anæmia	12·0	10·6	16·3	2·6	16·1	8·0	10·7
Scurvy .	5·2	·3	16·8	4·4	·2	2·1	2·6
Rheumatism ..	29·4	12·6	61·3	12·6	15·8	13·6	18·5
Venereal Diseases ...	11·4	10·2	17·3	16·4	13·1	10·0	12·1
Eye Diseases ..	9·6	11·5	17·3	13·8	15·6	13·5	12·2
Abscess and Ulcer .	61·7	97·4	238·0	107·4	119·1	89·3	94·3
Injuries .	38·4	50·6	66·0	22·0	42·1	26·6	40·4
All other Causes .	121·0	69·9	142·4	77·2	51·7	78·1	85·2
Admission-rate of the Year ...	1231·6	777·0	1565·3	843·4	946·0	1166·1	1019·8
3.—Composition of the Death-rate of the Year							
Cholera ...	4·75	5·33	1·07	...	2·96	3·03	4·04
Smallpox ..	·14	·28	...	.		...	·13
Fevers	3·96	1·87	4·44	1·18	3·12	7·92	3·88
Apoplexy .	·47	·14	...	·29	..	·30	·24
Dysentery and Diarrhœa ...	23·98	23·70	14·29	16·15	30·55	10·38	20·78
Hepatitis ...	·27	·09	..	...	...	·22	·15
Spleen Disease .	·54	·17	1·48	·20	·33	...	·28
Respiratory Diseases ..	3·55	3·74	2·46	4·99	7·06	7·33	4·84
Heart Diseases ..	·47	·23	..	·29	...	·22	·26
Phthisis Pulmonalis ...	3·08	2·57	·99	·88	1·15	1·04	2·07
Dropsy ...	1·04	·80	1·48	·29	·50	·37	·95
Atrophy and Anæmia .	2·01	2·34	6·41	1·76	2·30	·81	2·02
All other Causes ...	4·55	4·58	1·97	5·29	2·46	2·89	3·94
Death-rate of the Year .	49·70	45·81	35·19	31·41	50·43	34·49	43·58
	Died out of each hundred cases treated.						
4.—Mortality relative to the number treated.							
Cholera ...	43·08	42·54	80·00	[illegible]	62·07	45·06	44·29
Smallpox	50·00	12·77	...	...	...	...	12·50
Intermittent Fevers ..	·44	·23	·44	...	·38	·31	·33
Remittent and Continued Fevers	17·28	22·41	11·11	13·63	5·36	17·71	15·73
Apoplexy ..	70·00	100·00	..	50·00	...	33·33	51·72
Dysentery and Diarrhœa .	6·81	12·28	5·68	11·11	19·50	7·21	9·59
Hepatitis ...	12·12	6·67	...	..	..	15·79	10·46
Spleen Disease ..	2·70	4·17	21·43	11·11	8·00	.	3·37
Respiratory Diseases	10·06	17·70	5·62	10·69	16·54	13·83	13·48
Phthisis Pulmonalis	41·82	77·16	..	50·00	87·50	56·00	57·47
Dropsy	30·53	53·12	60·00	100·00	60·00	41·67	38·67
Atrophy and Anæmia .	16·76	22·03	39·39	66·67	14·29	10·19	18·96

JAILS OF THE BENGAL PRESIDENCY, 1872.

IX.

TABLE showing the GENERAL STATISTICS of SICKNESS and MORTALITY in the JAILS of the BENGAL PRESIDENCY, and the AVERAGE NUMBER DAILY SICK in each MONTH.

STATIONS.	Average Strength for the Year.	Daily Sick per 1,000 of Average Strength in each Month.												Daily Sick per 1,000 of Average Strength for the Year.	Admitted into Hospital per 1,000 of Average Strength.	Died per 1,000 of Average Strength.		
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A. Cholera.	B. All other Causes.	C. All Causes.
Presidency (Natives) ...	954	27·3	26·1	31·8	38·7	46·8	28·8	33·6	29·6	33·1	46·3	59·6	91·5	39·8	2166·7	12·58	35·64	48·22
Allipore ...	2,463	75·0	60·5	47·5	46·7	47·2	56·0	64·7	63·7	53·2	51·5	58·5	58·0	57·0	1499·5	1·67	31·62	33·29
Baraset ...	310	54·6	44·6	54·5	55·6	39·7	45·3	64·3	59·4	57·5	67·5	75·7	66·9	58·1	1435·5	...	180·65	180·65
Jessore	528	51·0	49·3	36·9	40·2	37·9	17·9	21·8	17·5	21·2	23·8	28·4	32·5	30·3	859·8	1·89	54·93	56·82
Kishnaghur	293	19·2	23·6	22·1	22·4	21·2	16·4	25·6	33·7	61·5	40·0	20·0	32·4	27·3	716·7	...	23·89	23·89
Moorshedabad	197	20·0	23·8	26·7	10·2	14·9	22·8	13·5	32·7	21·6	17·9	29·4	27·2	20·3	533·0	10·15	40·61	50·76
Hooghly ...	419	38·0	40·5	49·3	54·8	64·7	120·1	132·3	84·0	87·7	72·5	68·6	63·2	71·6	2424·8	4·77	85·92	90·69
Burdwan ..	211	229·1	81·4	55·0	59·7	57·3	62·8	71·4	62·2	63·4	74·4	61·7	90·0	80·6	2687·2	...	71·09	71·09
Bancoorah ...	241	4·2	8·3	4·5	4·5	4·1	4·0	3·9	4·2	4·4	13·1	8·0	7·4	4·1	298·7	...	...	...
Purulea ...	179	6·3	19·0	13·7	17·9	10·5	9·2	19·2	31·1	35·3	12·5	21·5	10·9	16·8	664·8	...	22·35	22·35
Sooree ..	260	31·9	40·7	48·0	37·2	27·1	28·2	77·7	104·2	95·1	78·1	72·5	54·7	59·5	1996·3	...	40·89	40·89
Rajmehal and Pakour	148	7·8	14·7	35·7	19·6	36·1	46·2	31·3	41·4	35·5	...	30·2	67·4	33·8	864·9	...	33·78	33·78
Deoghur and Sub-divns	101	..	..	33·3	...	8·2	7·1	16·9	50·0	31·6	23·8	11·8	13·9	19·8	514·8	...	19·80	19·80
Malda ..	82	72·5	25·3	19·8	37·4	17·9	16·7	26·7	73·5	54·8	32·8	40·0	61·5	36·6	1512·2	12·20	36·58	48·78
Dinagepore ...	387	47·7	38·2	38·9	47·4	47·2	52·5	69·9	67·3	51·3	62·5	47·9	51·6	51·7	1847·5	..	36·18	36·18
Rajshahye ...	559	18·7	15·1	21·4	22·3	22·6	17·3	18·3	24·6	21·8	22·2	20·1	29·9	21·5	583·1	3·58	19·68	23·26
Rungpore	251	41·7	34·2	37·0	16·0	43·5	45·8	46·9	41·7	48·2	49·4	44·0	39·7	43·8	1087·7	...	35·86	35·86
Bogra	108	50·5	49·3	33·9	26·8	18·3	19·0	29·4	40·4	60·6	39·2	50·8	30·8	37·0	1157·4	..	9·26	9·26
Mymensingh	396	13·6	25·7	21·7	20·3	22·5	20·8	21·6	30·6	30·2	29·6	28·3	33·0	25·3	1080·8	...	35·35	35·35
Pubna ...	135	41·3	46·2	46·[illegible]	40·8	41·4	39·0	40·0	45·8	56·0	61·4	49·6	31·7	44·4	2607·4	22·22	7·41	29·63
Furreedpore ...	362	20·9	13·7	17·4	15·1	8·7	11·2	17·9	27·0	13·4	16·6	27·2	24·6	19·3	671·3	..	5·52	5·52
Backergunge ...	597	27·3	33·1	24·4	25·5	20·5	29·2	39·5	34·6	55·6	68·0	77·5	40·0	38·5	802·3	16·75	112·23	128·98
Noacolly ...	164	41·9	36·1	42·5	15·2	55·6	51·9	47·1	61·0	52·6	60·0	58·4	57·7	48·8	1908·5	..	12·20	12·20
Chittagong	238	26·4	32·9	14·2	26·2	22·0	35·9	44·9	102·5	28·2	23·0	23·[illegible]	25·0	33·6	1420·2	..	25·21	25·21
Tipperah	233	11·7	32·7	21·8	17·9	12·8	13·1	13·8	17·8	26·8	32·3	29·4	16·0	21·5	635·2	..	17·17	17·17
Dacca ...	591	16·6	15·6	20·4	26·2	27·3	27·7	43·3	23·9	20·6	20·3	23·7	25·3	23·7	971·2	5·08	10·15	15·23
Sylhet ..	416	48·3	41·0	35·7	32·8	42·0	37·0	43·2	46·5	37·3	37·8	23·7	24·0	38·5	963·9	...	50·48	50·48
Shillong ..	36	23·8	51·3	54·1	52·6	78·9	131·6	100·0	33·3	85·7	117·6	90·9	121·2	83·3	1361·1	...	111·11	111·11
Cachar	115	56·5	57·4	48·8	58·4	45·5	49·6	30·4	39·2	53·[illegible]	46·5	47·1	48·1	52·2	1878·3	26·09	...	26·09
Gowalpara ..	104	63·8	20·2	46·3	67·3	75·5	66·7	90·1	86·5	76·2	84·0	55·6	38·8	67·3	2500·0	...	38·46	38·46
Gowhatty ...	75	48·2	11·1	.	63·3	55·6	60·6	82·0	43·5	84·5	61·7	66·7	63·3	53·3	1533·3	...	13·33	13·33
Seebsaugor	93	43·5	10·8	23·3	34·5	35·3	43·0	60·0	56·6	52·1	67·4	51·0	68·2	43·0	1731·2	21·50	64·52	86·02
Nowgong ..	96	57·1	36·4	17·1	36·0	14·5	25·3	25·0	60·2	44·0	20·2	21·1	10·9	31·2	937·5	...	20·83	20·83
Tezpore	178	50·0	48·4	38·3	71·0	85·4	69·0	83·3	71·4	102·3	70·2	72·2	75·1	67·4	3370·8	5·62	22·47	28·09
Debrooghur ...	65	44·8	61·5	30·8	32·3	53·3	54·1	55·6	30·8	34·5	16·4	16·9	...	30·8	2000·0	15·38	15·38	30·77
Midnapore ...	1,097	22·3	16·7	26·1	19·0	19·1	22·3	43·5	50·5	34·4	23·0	18·6	23·7	27·3	901·6	..	97·54	97·54
Balasore ..	162	12·0	18·7	24·7	24·7	29·2	10·6	17·1	53·3	27·2	32·7	18·5	19·9	24·7	777·8	6·17	6·17	12·34
Cuttack	240	21·0	27·1	37·7	28·6	22·0	21·0	50·6	51·0	40·7	38·1	33·1	20·8	33·3	1008·3	8·33	33·34	41·67
Pooree ..	93	20·8	19·4	27·8	27·3	21·3	19·8	31·2	45·5	26·7	62·5	25·0	11·9	32·3	2000·0	10·75	53·77	64·52
Monghyr	299	8·5	8·1	12·0	3·9	7·0	9·7	13·3	11·9	16·8	9·0	9·1	11·6	10·0	321·1	...	30·10	30·10
Bhaugulpore, Central (9 months)	776	..	...	...	14·8	18·0	19·3	10·0	16·2	29·3	35·7	27·7	14·0	20·6	457·5	..	19·33	19·33
Bhaugulpore District	420	12·8	15·3	14·4	34·8	20·8	18·2	18·9	15·2	11·8	17·3	23·5	19·6	16·7	323·8	2·38	71·43	73·81
Purneah	306	40·3	37·9	23·3	30·8	37·2	17·5	21·8	32·2	24·5	16·1	27·8	33·2	29·4	754·9	...	65·36	65·36
Julpigoree	61	102·9	106·1	82·2	64·1	100·0	89·6	36·6	63·8	46·5	83·3	44·4	22·7	65·6	1557·4	311·48	114·75	426·23
Darjeeling ..	52	20·0	34·5	17·9	17·5	33·3	36·4	17·5	37·7	20·0	93·0	47·6	50·0	38·5	846·1	..	38·46	38·46
	14,930	39·8	34·4	32·3	33·2	33·6	34·2	41·8	44·1	41·3	41·0	41·7	40·1	38·2	1231·6	4·75	44·95	49·70
Chyebassa	91	13·7	27·0	37·5	44·4	53·2	53·8	53·8	68·6	30·0	10·1	20·8	21·1	33·0	1054·9	...	43·96	43·96
Ranchee	207	39·1	38·1	48·5	35·2	46·2	46·0	53·2	44·3	63·7	24·8	30·0	28·3	38·6	1265·7	...	19·32	19·32
Hazareebaugh, Central	726	13·7	12·0	9·3	9·3	6·9	8·4	11·1	12·3	14·2	23·5	22·2	23·6	13·8	566·1	1·38	9·64	11·02
" District	136	22·9	15·3	22·2	28·0	25·5	17·0	30·1	30·1	25·6	26·9	25·4	17·2	22·1	992·7	..	44·12	44·12
Gyah	399	36·2	36·5	39·4	43·7	51·6	47·6	49·5	59·2	41·5	45·7	30·3	12·4	40·1	1200·5	2·51	67·67	70·18
Patna	411	16·4	19·2	17·5	15·5	11·8	13·3	9·9	10·1	12·4	14·6	17·1	15·8	14·6	369·9	...	36·50	36·50
Dehree Ghât working gang	798	13·5	28·2	27·4	46·3	48·8	40·7	54·0	77·5	69·4	83·6	66·6	40·7	50·1	1324·6	16·29	61·40	77·69
Arrah	421	13·5	20·6	22·6	23·5	19·5	18·3	25·1	23·9	24·2	21·5	28·1	16·1	21·4	650·8	...	33·25	33·25
Chumparun	255	34·8	28·9	29·3	25·2	24·7	42·9	36·0	20·9	29·8	28·1	42·5	23·9	31·4	1074·5	7·84	121·57	129·41
Mozufferpore	400	21·2	19·3	25·1	17·7	20·2	15·6	25·6	63·7	33·9	23·7	22·2	14·5	25·0	880·0	97·50	112·50	210·00
Chuprah ...	328	...	..		...	3·0	14·9	20·6	42·4	47·9	33·1	24·7	15·2	18·3	490·8	24·39	33·54	57·93
Ghazeepore	499	7·0	4·7	9·3	2·4	...	4·3	7·8	9·1	9·9	9·7	11·8	7·9	8·0	212·4	...	30·06	30·06
Benares, Central	1,268	60·9	42·3	25·0	19·3	23·6	27·6	26·9	42·4	52·6	45·6	38·4	37·6	37·1	979·5	3·95	37·91	41·86
" District	531	40·8	35·8	32·3	37·4	36·3	35·2	37·0	41·1	42·2	46·0	38·3	30·8	37·7	981·2	1·88	22·60	24·48
Mirzapore	261	21·8	33·7	33·2	35·1	30·1	36·2	41·0	24·1	29·0	35·8	41·4	32·5	34·5	1038·3	15·33	42·14	57·47
Azimghur	368	22·3	29·1	17·6	37·7	25·6	28·4	32·1	41·0	33·5	42·0	36·7	59·7	35·3	1546·2	19·02	65·22	84·24
Jounpore	293	13·1	33·7	38·1	35·9	45·0	62·0	61·0	70·0	137·6	112·2	82·4	69·5	71·7	1907·8	..	92·15	92·15
Goruckpore	727	57·6	49·9	42·5	51·6	60·3	40·0	52·7	62·7	73·4	87·0	87·7	67·1	63·3	1995·9	.	126·55	126·55
Bustee	363	42·0	30·8	36·4	32·8	33·0	35·0	28·7	30·2	35·0	38·4	42·1	43·2	35·8	1151·5	..	60·60	60·60
Gondah	595	11·6	13·4	25·5	25·8	20·0	8·9	8·2	13·0	7·6	13·7	31·0	25·6	16·8	554·6	...	42·02	42·02
Baraich	337	3·1	5·9	11·3	14·4	22·0	26·5	22·5	32·2	49·0	33·4	28·4	20·5	23·7	762·6	...	35·61	35·61
Fyzabad ...	955	11·3	11·3	11·5	17·2	18·8	14·1	12·2	14·7	15·5	14·9	36·5	28·2	17·8	627·2	19·90	63·87	83·77
Sultanpore	524	8·8	8·1	6·0	10·3	8·1	7·7	4·7	4·8	6·4	8·1	8·4	8·3	7·6	187·0	...	26·72	26·72
Rae Bareilly ..	576	26·8	34·2	36·0	31·7	25·2	31·5	35·5	44·9	36·2	26·8	23·8	25·3	31·2	727·4	1·74	34·72	36·46
Pertabghur	303	30·9	36·4	30·6	31·0	17·2	15·8	23·0	22·4	25·9	24·2	24·1	24·8	26·4	1458·7	...	29·70	29·70
Hurdui	253	14·6	15·7	10·4	10·2	16·3	17·6	21·7	24·9	11·9	16·9	12·2	8·4	15·8	442·7	...	7·90	7·90
Kheree	165	23·1	25·0	51·6	44·9	39·7	51·0	30·5	27·5	33·7	50·8	27·8	20·7	36·4	2097·0	...	48·48	48·48
Lucknow, Central	1,687	16·8	18·2	19·3	17·5	15·6	17·5	21·8	19·0	17·7	19·8	17·6	19·6	18·4	249·0	...	32·60	32·60
" District	1,030	25·3	25·4	22·9	24·6	24·6	24·5	24·5	41·8	35·1	23·0	28·0	26·3	26·9	353·2	...	37·54	37·54
Seetapore	791	11·3	6·9	10·6	10·2	8·8	8·8	8·7	10·7	15·9	11·9	13·3	11·1	10·1	620·8	...	11·38	11·38
Nawabgunge	161	24·1	11·4	7·2	8·1	15·0	6·3	6·7	13·5	22·2	26·5	14·3	29·4	12·4	403·7	...	6·21	6·21
Oonao	246	16·0	18·6	12·3	13·7	9·5	8·9	20·7	22·7	17·7	31·6	20·6	24·4	20·3	561·0	8·13	12·20	20·33
Humeerpore ..	212	20·7	26·3	31·2	36·4	20·8	22·2	42·8	53·9	67·2	78·7	20·9	22·8	41·3	1252·0	...	24·79	24·79
Oraie	162	34·7	36·2	30·5	23·1	13·5	18·3	16·6	16·5	33·0	38·9	34·5	16·1	24·7	777·8	...	37·04	37·04
Futtehghur, Central ..	878	35·1	30·1	35·4	25·0	31·0	27·0	35·3	34·2	28·3	23·7	23·1	16·6	29·6	749·4	2·28	22·78	25·06
" District	380	36·2	31·2	32·3	29·0	30·6	27·0	24·8	19·9	22·7	13·0	13·1	12·9	23·7	631·6	7·90	7·90	15·80
Cawnpore ..	365	27·6	20·8	25·1	21·0	14·0	12·8	24·1	14·8	22·4	30·9	24·8	22·0	21·9	685·7	2·74	30·14	32·88
Futtehpore	365	22·4	31·5	26·6	35·5	32·4	19·9	7·4	14·2	22·7	35·7	32·2	25·8	24·7	1101·8	...	32·88	32·88

STATIONS.	Average Strength for the Year.	Daily Sick per 1,000 of Average Strength in each Month.												Daily Sick per 1,000 of Average Strength for the Year.	Admitted into Hospital per 1,000 of Average Strength.	Died per 1,000 of Average Strength.		
		Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.			A. Cholera.	B. All other Causes.	C. All Causes.
Banda ...	372	32·4	31·3	18·4	24·8	20·2	29·6	22·3	25·8	30·7	29·1	22·4	24·4	26·9	1190·9	...	61·83	61·83
Allahabad, Central ...	1,721	18·4	18·5	17·4	22·3	24 1	20·6	22·4	48·3	51·5	27·1	27·4	19·6	26·7	506·7	...	29·63	29·63
„ District ...	800	20·1	16·0	16·3	12·5	12·0	7·7	11·5	17·4	22·7	13·7	12·5	7·7	13·8	383·7	6·25	15.00	21·25
	21,393	24·3	23·3	22·7	24·1	23·5	22·8	25·1	32·4	34·1	32·0	30·3	25·3	26·8	777·0	5·33	40·48	45·81
Sumbulpore ...	97	92·0	114·9	107·5	89·3	86·2	73·7	101·1	105·3	94·7	61·9	58·3	70·7	92·8	2597·9	...	20·62	20·62
Raepore ...	234	56·2	39·5	42·9	63·1	60·0	59·6	63·0	72·9	91·3	70·2	60·2	28·0	59·8	1769·2	...	12·82	12·82
Belaspore ...	53	24·4	25·6	...	...	16·4	15·4	13·0	13·0	16·4	...	...	...	18·9	169·8	...	...	...
Mundla ...	46	..	...	...	27·0	21·3	23·8	27·7	47·6	34·5	...	...	...	22·2	600·0	...	...	...
Seonee ...	117	46·5	47·2	33·6	17 1	49·6	41·7	72·1	77·6	57·9	61·9	51·0	51·7	51·3	1820·5	...	102·56	102·56
Chindwarra ...	52	41·7	69·8	61·2	39·2	88·9	21 7	20·8	85·1	75 5	50·0	32·8	13·7	38·5	1250 0	...	134·62	134·62
Baitool ...	72	...	13·7	13·9	25·0	24·7	13·5	14·9	...	13·3	...	31·7	41·6	13·9	319·5	...	41·67	41·67
Nursingpore ...	132	19·0	9·6	18·5	7·3	8·5	14·6	7·7	43·2	31·5	22·9	25·8	16 8	22·7	780·3	...	15 15	15·15
Hoshungabad ...	125	20·0	21·3	34·2	16·9	18·9	31 5	19·6	27·5	22·2	26·5	34·7	20·2	24 0	1320·0	...	40·00	40·00
Nimar ...	85	17·2	36·1	27·0	56·6	41·7	38·2	25 4	79·2	50·8	46·2	49·4	38·5	47·1	2153·0	47·06	...	47·06
Sehore ...	71	80·6	80 6	68·5	60·2	92·1	66·7	93·3	130·4	135·1	203·1	163·9	111·1	98·6	3154·9	...	84·51	84·51
Nagpore ...	709	51·0	34 3	25·1	20·7	23·1	19·9	25·8	39·6	86·9	52·0	36·6	84·3	30·7	1567·8	...	26·80	26·80
Bandhara ...	63	62·5	31·7	28·2	33·9	48·4	15·9	31·7	33 0	17·5	32·3	46·2	15 9	31·7	2158·7	...	15·87	15·87
Wurdah ...	50	25 0	24·4	27·8	...	22·2	40·8	71·4	63·8	51·7	40·2	14·1	37·4	40·0	2520 0	...	...	...
Chanda ..	108	30·3	26·3	16·3	17·2	34·8	29·1	38·5	48·5	26·3	30·0	28·8	30·3	27·8	1046·3	...	74·07	74·07
	2,029	45·7	38·3	32·9	30·8	38·5	33·2	38·9	54·4	65·5	49·5	43·7	36·3	42·4	1565·3	1·97	33·52	35·49
Jubbulpore ...	600	32·6	25·4	31·4	16·6	30·1	44·0	43·5	31·0	30·8	39·0	53·8	62·5	37·9	984·8	...	65·15	65·15
Dumoh ...	49	18·2	...	..	...	19 6	..	27·0	41·7	35·1	42·6	46·5	..	20·4	714·3	...	40·81	40·81
Saugor ...	147	82·8	54·8	42·6	59·2	65·7	69·4	51·5	74·6	114·1	131·0	49·4	28·7	68·0	2435·4	...	13·61	13·61
Lullutpore ...	122	24 4	23·3	29·6	24 8	14·2	21·2	35·4	25·6	...	8·5	17·5	27·8	24·6	393·5	...	16·40	16·40
Jhansi ..	250	17·1	8 6	4·2	4·1	4·0	13·2	3·7	...	7·2	7·6	22·1	34·8	12·0	188·0	...	36·00	36·00
Ajmere ..	314	90·1	85·5	49·0	43·3	45·6	51·4	44·6	68·1	74·7	94·8	62·1	30·5	63 7	1465·0	...	60·51	60·51
Muttra ...	204	5·2	14·6	14·8	11·2	12·1	13.9	18·2	14·6	32 1	35 7	26·9	10·0	19·6	936·3	...	9·80	9·80
Agra, Central ...	1,339	11·3	12 1	13 0	12·7	10·9	12·1	12·9	25 9	46·3	32 9	23 0	16·2	20·2	640·8	...	16·43	16·43
„ District ...	322	7·5	8·0	11·5	12·2	9·3	9·6	10·2	27·3	51·7	30·3	13·2	20·1	15·5	705·0	...	18·63	18·63
	3,407	26 4	23·3	20·6	17·8	19·7	25·0	24·5	30·4	43·3	40·7	33·1	30·0	28 2	843 4	...	31·41	31·41
Etawah ...	247	20·1	14·6	12·5	20·3	20·8	24·2	11·5	16·8	32·5	21·7	12·6	4·0	16·2	753·0	...	8·10	8·10
Mynpoorie ...	406	44·5	37·5	37·9	29·6	33·1	28·0	31·3	35·4	34·5	37·0	44·9	25·2	34·5	741·4	...	17·24	17·24
Etah ...	254	36·5	20·1	26·9	35·2	27·0	31·0	46·5	32·0	39·3	18·4	22·4	19·0	31·5	826·8	...	7·87	7·87
Allyghur ...	470	7·8	7·8	8·1	10·2	12·7	17·8	14·9	15·3	34·5	27·1	24·5	20·0	17·0	593·6	...	21·28	21·28
Bolundshuhur ...	139	25·0	18·5	31·7	26·0	44·1	44·1	37·6	56·7	100·7	138·9	61·7	12·0	50·4	848·9	21·58	28·78	50·36
Shahjehanpore ...	254	31·1	28·2	19·9	24·0	31·1	31·2	26·9	35·4	33·0	30·7	27·8	34·9	31·5	759·8	3·95	31·48	35·43
Budaon ...	295	27·5	23·6	12·2	11·6	12·8	12·5	19·6	10·1	9·8	14·1	13 6	4·5	13·6	423 7	...	27·12	27·12
Bareilly, Central ...	975	24·7	26·0	21·2	23·4	21·9	21·7	21·8	20·1	27·7	34·2	35·4	35·2	26·7	703·6	...	55·38	55·38
„ District ...	625	15·6	21·5	22 1	24·3	27 2	24·6	19·9	21·3	35·7	22·4	23·4	22 7	24·0	811·4	...	38·40	38·40
Moradabad ...	333	16·6	15·9	16·8	19·9	23·3	22 8	18·9	24·0	20·1	24·7	16 5	18 6	21·0	633·6	...	12·01	12·01
Almorah ...	168	20·7	18·8	19 0	32·1	31·1	17·5	22·1	16·0	22·1	16·5	22·5	12·1	17·8	511·9	...	41·67	41·67
Bijnore ...	197	6·5	13·7	6.9	13·0	11·0	9·7	4·5	16·4	16·3	16·3	21·2	16·1	15·2	487 3	...	25·38	25·38
Deyrah ...	58	57·7	51·7	35·7	17·5	64·5	33·3	30·3	60·0	10.2	48·4	47·6	17·5	34·5	1069·0	68·96	51·73	120·69
Saharunpore ...	209	34·1	41·4	46·7	58·4	59·7	44·1	26·1	42 9	55·2	39·5	28·8	39·7	43·5	1240·8	...	33·44	33·44
Mozuffernuggur ...	129	16·5	22 4	14 9	16·5	24·2	14·9	13·3	28 2	35 0	38·8	25 6	20·0	23 3	395·4	...	7·75	7·75
Meerut, Central ...	877	34·2	34·7	32·2	32·1	24·2	24·7	27·1	60·2	130·5	133·2	60·4	39·6	52·5	1481·2	11·40	107·19	118·59
„ District ...	363	41·4	29·1	28·3	20·8	37·7	27·7	43·3	120·3	110·3	118·0	70·8	42·1	60·6	2088·7	...	126·72	126·72
	6,088	26·1	25·1	23·5	25·6	26·6	24·5	24·2	37·2	51·7	49·5	35·1	27 1	31·5	916·0	2·96	47·47	50·43
Delhi ...	321	41·8	38·8	33·6	29·0	19·5	20·8	27·6	59·9	78 4	76·4	33·6	18·7	40·5	1420·6	...	59·19	59·19
Goorgaon ...	153	18·8	30·3	30·1	38·8	10·4	33·3	35·7	69·4	148·9	98 3	68·7	43·1	58 8	2483·7	...	...	...
Rohtuck ..	198	11·8	16·8	11·3	17·4	11·2	10·4	14·2	12·9	17·2	9·2	...	10·0	10·1	520·2	...	15·15	15·15
Hissar ...	219	10·3	9·6	19·5	14·4	19·1	13·5	23·3	30·2	36·9	48·2	51·3	22 1	27·4	1091·3	...	41·10	41·10
Sirsa ...	279	9·5	17·1	10·3	10 5	25·0	10·7	14·4	33·8	45·1	73·8	72·5	19 6	28·7	992·8	...	10·75	10·75
Kurnaul ...	221	6·0	5·0	4·7	4·8	14·3	...	8·8	25·3	25·6	12·8	8·3	4·3	9·0	628·9	...	18·10	18·10
Umballa ...	670	12·1	9·1	14·0	15·5	12·5	9·8	14·1	29·6	41·5	39·9	17·7	4·7	17·9	749·2	8·95	28·36	37·31
„ Gang at Roopar	489	33·3	44·1	40·6	40·6	34·6	35·8	46·5	42·3	69·4	117·5	99·3	53 6	53·4	3051·1	12·27	18·40	30·67
Loodianah ..	292	11·3	15·4	15·2	15·4	23·3	31·1	24·8	51·8	79·9	18·5	55·2	41·2	31·2	1325·3	...	30·82	30·82
Jullundur ..	340	19·3	20·0	26·6	33·2	35·1	31·4	20·2	18·8	21·6	20·6	17·2	17·0	23·5	629·4	5·88	14·71	20·59
Ferozepore ...	413	17·9	13·6	7·1	9·9	15·6	16·0	10·4	17·4	12 0	9·2	2·3	9·6	12·1	319·6	...	4·84	4·84
Umritsur ...	656	8·7	22·1	93·7	67·5	40·3	26·8	20·9	42 3	114·9	120·6	104·5	122 5	65·5	2224 1	...	108·23	108·23
Lahore, Central ...	2,344	10·6	10·0	7·3	6·5	7·1	12·9	17·2	65·2	23 5	59·6	47·6	43·5	24·7	1136·5	9·39	42·66	52·05
„ Female Jail ...	160	30·3	31·6	32·7	24·0	42·7	29·2	56·2	91·5	108·1	61·7	49·7	38·5	50·0	2293·8	...	56·25	56·25
Sealkote .	485	12·0	11·0	26·9	29·5	32·3	43·9	36·1	37·3	52·3	42·8	54·7	50·7	37·1	1187·6	...	18·56	18·56
Dhurmsalla ...	137	22·2	22·7	22·6	15·4	14·7	36·5	28·2	39·5	28·4	29·2	21 9	30·8	29·2	1014·6	...	14·60	14·60
Goordaspore ..	308	10·8	7·7	18·7	13·7	18·6	9·7	12·3	20·1	8·4	32·2	20·1	13·8	16·2	577·9	...	29·22	29·22
Goojranwalla .	537	5·2	8·7	5·4	5·0	11·9	14·1	16·9	23·8	29·6	13·2	13·3	20·9	14·9	398·5	1·86	31·66	33·52
Goojrat ..	252	8·1	8·5	13·7	5·2	...	9·0	7·9	7·3	21·1	20·1	9·8	6·7	11·9	329·4	...	7·94	7·94
Shahpore ...	284	5·5	5·2	2·7	6·3	10·4	7·5	7·8	44·3	118·6	48·6	55·3	27·3	24 6	1112·7	...	45·78	45·78
Jhelum ...	289	3·5	3·9	4·1	7·3	3·6	3·5	3·5	10·1	9·6	9·3	21 7	29·9	10·4	660·9	...	24·22	24·22
Montgomery .	638	14·4	11·6	16·9	16 2	11·2	11·6	9·9	12·0	23·5	22·9	23·4	15·8	15·7	757·1	...	15 67	15·67
Mooltan ...	785	18·3	15·5	18·6	25·2	28·2	31·2	22·8	32·0	40·6	48·8	47·5	32·0	30·6	989·8	..	20·38	20·38
Jhung .	340	15·2	9·6	3·1	3·2	6·1	3·0	5·7	5·4	5·1	10·3	7·8	5·4	5·7	333·9	...	2·87	2·87
Dera Ghazee Khan ...	331	25·9	28·6	18·2	30·5	50·4	44·4	51·8	34·6	48·0	74·6	42·4	29·2	30·3	2592·1	...	18·13	18·13
Dera Ismael Khan ...	410	25·3	33 6	19·4	41·9	32·3	39·2	37·5	33·7	34 1	51·9	45·5	34·1	36·6	1680·5	...	29 27	29·27
Kohat ...	181	65·2	58·2	49·2	51·3	38·9	64·0	58·8	70·4	131·6	117 0	93 6	63·8	71·8	2508·3	16·57	16·57	33·15
Bunnoo ...	129	23·5	37·8	25·9	14·9	14·8	41·8	39·7	36·0	22·4	34·5	37·4	39·6	31·0	1550·4	...	38 76	38·76
Rawulpindee ...	1,025	12·3	13·7	17·4	19·2	10·5	17·6	20·3	33·2	40·4	30·0	25·6	23·8	22·4	874·2	...	13 66	13·66
Peshawur ...	620	27·8	21·8	26 9	27·4	38·0	39·5	34·6	34·0	37·0	48 6	54·1	45·6	37·1	1221·0	1·61	59·50	61·11
	13,512	15·7	16·7	19·9	20·0	19·9	21·4	22·5	37·3	42·2	47·1	40·8	33·4	28·3	1166·1	3·03	31·46	34·49
Bengal Presidency...	61,359	27·0	25·1	24·7	25·4	25·8	26·0	29·0	37·4	40·8	40·2	36·3	31·4	31·0	1019·8	4·04	39·54	43·58

JAILS OF THE BENGAL PRESIDENCY, 1872.

X.

TABLE showing the RATIO in which the PRINCIPAL DISEASES have contributed to make up the ADMISSION-RATE of the YEAR in the JAIL HOSPITALS of the BENGAL PRESIDENCY.

STATIONS.	Average Strength for the Year.	Admitted into Hospital per 1,000 of Average Strength.												Admitted per 1,000 of the Average Strength from all Causes.
		Cholera.	Fever, Intermittent.	Fever, Remittent and Continued.	Dysentery & Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Phthisis Pulmonalis.	Dropsy.	Atrophy and Anæmia.	Scurvy.	All other Causes.	
Presidency (Natives)	954	19·9	941·3	...	864·8	...	12·6	6·3	16·8	2·1	7·3	...	295·6	2166·7
Allipore	2,403	7·1	357·5	·8	555·6	1·2	28·3	35·8	5·0	4·2	12·9	3·7	397·4	1409·5
Baraset	310	3·2	454·8	20·0	545·2	...	48·4	77·4	32·3	9·7	9·7	9·7	216·1	1435·5
Jessore	528	1·9	475·4	13·2	170·5	3·8	13·2	43·6	5·7	5·7	13·2	...	113·6	859·8
Kishnaghur	293	...	225·3	...	191·1	...	3·4	37·5	3·4	3·4	3·4	...	249·2	716·7
Moorshedabad	197	10·2	279·2	5·1	50·8	...	10·1	10·1	...	...	10·1	...	157·4	533·0
Hooghly	419	4·8	825·8	..	854·4	2·4	19·1	23·8	38·2	9·5	...	2·4	644·4	2424·8
Burdwan	211	9·5	1990·5	...	265·4	9·5	37·9	33·2	...	...	9·5	...	331·7	2687·2
Bancoorah	241	...	186·7	...	16·6	...	...	16·6	4·1	...	20·8	...	53·9	298·7
Purulea	179	...	273·8	22·3	139·6	..	..	16·8	...	5·6	11·2	...	195·5	664·8
Sooree	269	7·4	806·7	33·5	223·0	11·2	70·6	96·7	3·7	..	14·9	...	728·6	1996·3
Rajmehal and Pakour	148	...	439·2	6·8	189·2	...	20·2	33·8	...	6·8	...	...	168·9	864·9
Deoghur and Sub-divisions	101	...	69·3	9·9	148·5	...	...	9·9	...	...	...	...	277·2	514·8
Malda	82	36·6	426·8	...	304·9	...	97·5	61·0	...	..	...	...	585·4	1512·2
Dinagepore	387	...	612·4	..	444·4	...	10·3	49·1	5·2	43·9	36·2	5·2	640·8	1847·5
Rajshahye	559	8·9	270·1	7·2	162·8	...	7·2	16·1	8·9	8·9	28·6	...	64·4	583·1
Rungpore	251	...	398·4	4·0	247·0	...	4·0	39·8	8·0	51·8	..	...	334·7	1087·7
Bogra	108	...	722·2	...	250·0	9·3	9·3	37·0	...	9·3	27·8	...	92·5	1157·4
Mymensingh	396	5·1	441·9	5·1	386·4	...	20·2	40·4	32·8	2·5	2·5	2·5	141·4	1080·8
Pubna	135	29·6	814·8	...	466·7	...	...	51·9	...	...	...	...	1244·4	2607·4
Furreedpore	362	...	259·7	...	93·9	...	16·6	47·0	5·5	...	2·8	...	245·8	671·3
Backergunge	597	38·5	211·0	68·7	263·0	1·7	10·0	35·2	...	...	6·7	13·4	154·1	802·3
Noacolly	164	..	737·8	6·1	225·6	...	61·0	12·2	12·2	...	36·6	...	817·0	1908·5
Chittagong	238	4·2	416·0	4·2	226·9	...	...	54·6	...	21·0	8·4	...	684·9	1420·2
Tipperah	233	.	321·9	...	103·0	...	38·6	12·9	12·9	...	8·6	...	137·3	635·2
Dacca	591	15·2	220·0	93·1	187·8	...	13·5	33·8	15·2	...	5·1	...	387·5	971·2
Sylhet	416	...	423·1	16·8	129·8	...	4·8	16·8	...	7·2	7·2	76·9	281·3	963·9
Shillong	36	...	583·3	27·8	222·2	...	...	..	...	27·8	250·0	55·6	194·4	1361·1
Cachar	115	26·1	678·3	8·7	400·0	8·7	...	43·5	...	34·8	17·4	...	660·8	1878·3
Gowalpara	104	...	1009·6	...	644·2	9·6	...	48·1	38·5	...	67·3	...	682·7	2500·0
Gowhatty	75	..	906·7	...	306·7	13·3	...	80·0	...	...	...	...	226·6	1533·3
Seebsaugor	93	43·0	580·6	43·0	559·1	...	21·5	53·8	...	10·8	21·5	...	397·9	1731·2
Nowgong	96	..	614·6	..	62·5	10·4	31·3	10·4	...	20·8		...	187·5	937·5
Tezpore	178	33·7	719·1	5·6	977·5	61·8	241·6	168·6	...	5·6	39·3	...	1118·0	3370·8
Debrooghur	65	15·4	523·1	...	430·8	...	15·4	46·1	...	...	...	...	969·2	2000·0
Midnapore	1,097	1·8	349·1	...	328·2	1·8	6·4	71·1	4·6	5·5	5·5	·9	126·7	901·6
Balasore	162	6·2	246·9	...	160·5	...	...	6·2	...	...	...	...	358·0	777·8
Cuttack	240	8·3	341·7	25·0	287·5	...	4·2	12·5	...	...	...	...	329·1	1008·3
Pooree	93	21·5	957·0	...	204·3	...	...	43·0	...	...	10·8	...	763·4	2000·0
Monghyr	299	..	80·3	3·3	87·0	...	...	20·1	6·7	...	20·1	3·3	100·3	321·1
Bhaugulpore, Central (9 months)	776	20·6	122·4	...	127·6	...	5·2	2·6	...	1·3	2·6	23·2	152·0	457·5
" District	420	21·4	71·4	7·1	73·8	...	9·5	11·9	...	2·4	19·1	...	107·2	323·8
Purneah	306	...	287·6	...	117·6	9·8	39·2	22·9	3·3	22·9	19·6	...	232·0	754·9
Julpigoree	61	409·8	475·4	32·8	426·2	...	49·2	32·8	...	...	32·8	...	98·4	1557·4
Darjeeling	52	.	192·3	19·2	307·7	...	19·2	38·5	...	19·2	19·2	...	230·8	846·1
—	14,930	11·1	445·7	11·1	352·2	2·2	19·8	35·3	7·4	6·4	12·0	5·2	323·2	1231·6
Chyebassa	91	11·0	351·6	11·0	329·7	...	11·0	...	...	...	..	...	340·6	1054·9
Ranchee	207	9·7	487·9	..	372·0	...	...	58·0	...	9·7	38·6	...	289·8	1265·7
Hazareebaugh, Central	726	5·5	332·0	11·0	88·1	...	...	12·4	...	...	6·9	...	110·2	566·1
" District	136	7·4	536·7	7·4	242·6	...	44·1	7·4	...	7·4	...	...	139·7	992·7
Gyah	399	17·5	323·3	...	451·2	2·5	...	27·6	2·5	2·5	10·0	...	363·4	1200·5
Patna	411	4·9	92·4	7·3	175·2	4·9	...	4·9	4·9	7·3	2·4	...	65·7	369·9
Dehree Ghât	798	57·6	342·1	...	339·6	1·3	...	95·2	12·5	1·3	...	1·3	473·7	1324·6
Arrah	421	...	121·1	7·1	239·9	...	7·1	40·4	...	4·8	11·9	...	218·5	650·8
Chumparun	255	11·8	329·4	19·6	490·2	3·9	7·8	15·7	..	15·7	15·7	...	164·7	1074·5
Mozufferpore	400	185·0	132·5	...	375·0	...	10·0	12·5	...	5·0	12·5	2·5	145·0	880·0
Chuprah	328	42·7	91·5	6·1	314·0	...	...	3·0	3·0	3·0	6·1	...	21·4	490·8
Ghazeepore	499	...	40·1	6·0	92·2	2·0	...	4·0	4·0	...	16·0	...	48·1	212·4
Benares, Central	1,266	4·7	336·5	·8	212·5	...	2·4	10·3	2·4	...	11·0	...	398·9	979·5
" District	531	5·6	418·1	...	180·8	1·9	1·9	18·8	11·3	...	...	...	342·8	981·2
Mirzapore	261	26·8	214·6	15·3	180·1	...	3·8	11·5	3·8	...	...	...	582·4	1038·3
Azimghur	368	21·5	358·7	...	546·2	...	...	13·6	...	...	5·4	...	597·8	1543·2
Jounpore	293	...	498·3	3·4	546·1	...	...	64·8	...	...	34·1	...	761·1	1907·8
Goruckpore	727	...	763·4	6·9	733·2	...	6·9	16·5	1·4	...	20·6	...	447·0	1995·9
Bustee	363	...	548·2	5·5	225·9	2·8	...	16·5	2·8	...	5·5	...	344·3	1151·5
Gondah	595	...	305·9	5·0	35·3	...	...	13·4	3·4	5·0	13·4	...	173·2	554·6
Baraich	337	...	436·2	3·0	130·5	3·0	8·9	26·7	...	...	...	...	154·3	762·6
Fyzabad	955	70·2	187·4	1·0	280·6	2·1	...	2·1	...	...	...	...	83·8	627·2
Sultanpore	524	...	70·6	5·7	74·4	...	...	3·8	...	...	...	...	32·5	187·0
Rae Bareilly	576	3·5	352·4	24·3	149·3	1·7	...	24·3	10·4	...	38·2	...	123·3	727·4
Pertabghur	303	...	448·8	42·9	161·7	...	...	19·8	3·3	...	6·6	...	775·6	1458·7
Hurdui	253	...	134·4	4·0	55·3	4·0	4·0	35·5	4·0	...	...	...	201·5	442·7
Kheree	165	...	890·9	6·1	200·0	12·1	12·1	36·4	18·2	...	...	...	921·2	2097·0
Lucknow, Central	1,687	...	69·4	5·3	65·7	1·2	1·8	8·9	5·3	3·6	17·2	...	80·6	249·0
" District	1,039	2·9	55·8	1·9	129·0	...	1·0	14·4	6·7	...	40·4	...	101·1	353·2
Seetapore	791	...	276·9	2·5	108·7	7·6	1·3	3·8	...	1·3	...	...	218·7	620·8
Nawabgunge	161	...	161·5	...	55·9	6·2	6·2	6·2	...	...	...	...	167·7	403·7
Oonao	246	16·3	105·7	20·3	130·0	...	4·1	36·6	...	...	4·1	...	243·9	561·0
Humeerpore	242	...	359·5	12·4	132·2	4·1	37·2	49·6	...	...	49·6	...	607·4	1252·0
Oraie	162	...	444·4	6·2	104·9	...	...	30·9	...	...	...	...	191·4	777·8
Futtehghur, Central	878	2·3	144·6	1·1	94·5	...	3·4	11·4	8·0	2·3	...	2·3	479·5	749·4
" District	380	7·9	347·4	18·4	179·0	...	...	7·9	...	...	...	...	371·0	931·6

STATIONS.	Average Strength for the Year.	Admitted into Hospital per 1,000 of Average Strength.												Admitted per 1,000 of the Average Strength from all Causes.
		Cholera.	Fever, Intermittent.	Fever, Remittent and Continued.	Dysentery & Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Phthisis Pulmonalis.	Dropsy.	Atrophy and Anæmia.	Scurvy.	All other Causes.	
Cawnpore	365	2·7	161·2	2·7	76·5	5·5	19·1	19·1	2·7	...	...	2·7	393·5	685·7
Futtehpore	365	...	498·7	...	213·7	8·2	2·7	93·2	6·5	2·7	5·5	2·7	358·9	1191·8
Banda	372	...	534·9	32·3	153·2	...	32·3	104·8	...	5·4	5·4	...	322·6	1190·9
Allahabad, Central	1,721	...	170·8	·6	81·3	...	...	16·9	2·3	...	9·9	...	224·9	506·7
„ District	800	8·7	198·8	...	97·5	...	1·2	7·5	...	...	6·2	...	63·8	383·7
	21,393	12·5	265·7	5·6	193·1	1·4	3·4	21·1	3·3	1·5	10·6	·3	258·5	777·0
Sumbulpore	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raepore	234	...	726·5	21·4	200·8	...	...	...	4·3	...	...	...	816·2	1769·2
Belaspore	53	...	...	...	18·9	...	...	...	...	...	...	...	150·9	169·8
Mundla	45	...	355·6	...	133·3	...	...	...	...	...	...	...	111·1	600·0
Seonee	117	...	752·1	...	589·8	...	...	42·7	...	8·5	...	...	427·4	1820·5
Chindwarra	52	...	346·1	...	346·1	...	38·5	76·9	...	...	38·5	...	403·9	1250·0
Baitool	72	...	41·7	13·9	83·3	...	13·9	41·7	...	...	13·9	...	111·1	319·5
Nursingpore	132	...	295·4	45·5	318·2	...	...	30·3	...	...	...	...	90·9	780·3
Hoshungabad	125	...	648·0	32·0	320·0	...	...	16·0	...	...	...	...	304·0	1320·0
Nimar	85	58·8	1011·8	...	200·0	...	11·8	82·4	...	...	23·5	...	764·7	2153·0
Sehore	71	...	1084·5	14·1	887·3	42·2	14·1	253·5	...	...	28·2	...	831·0	3154·9
Nagpore	709	...	778·6	...	150·9	...	9·9	50·8	...	1·4	29·6	48·0	438·6	1507·8
Bandhara	63	...	650·8	47·6	492·1	...	...	63·5	...	...	...	...	901·7	2158·7
Wurdah	50	...	1220·0	20·0	280·0	...	20·0	...	...	...	...	...	980·0	2520·0
Chanda	108	...	351·9	...	111·1	...	...	9·3	...	18·5	37·0	...	518·5	1046·3
	2,029	2·4	677·2	13·3	251·9	1·5	6·9	43·8	·5	2·4	16·3	16·8	532·3	1565·3
Jubbulpore	660	1·5	292·4	12·1	384·9	...	1·5	33·3	...	...	1·5	...	257·6	984·8
Dumoh	49	...	285·7	...	61·2	...	...	...	...	20·4	...	...	347·0	714·3
Saugor	147	...	1142·9	13·6	210·9	...	13·6	47·6	...	...	...	...	1006·8	2435·4
Lullutpore	122	...	155·7	...	73·8	...	...	49·2	...	...	...	8·2	106·6	393·5
Jhansi	250	...	12·0	32·0	16·0	...	12·0	24·0	...	..	4·0	...	88·0	188·0
Ajmere	314	...	519·1	19·1	133·8	...	...	149·7	...	...	6·4	6·4	630·5	1465·0
Muttra	204	...	416·7	...	210·8	...	4·9	9·8	...	...	..	...	294·1	936·3
Agra, Central	1,339	...	181·5	...	60·5	...	·7	44·1	4·5	...	3·7	9·0	336·8	640·8
„ District	322	3·1	344·7	...	87·0	...	3·1	31·1	...	..	...	...	236·0	705·0
	3,407	·6	293·2	7·0	145·3	...	2·6	46·7	1·8	·3	2·6	4·4	338·9	849·4
Etawah	247	...	388·7	...	72·9	...	4·0	56·7	8·1	...	4·0	...	218·6	753·0
Mynpoorie	406	...	268·4	2·5	133·0	...	12·3	54·2	2·5	2·5	7·4	..	258·6	741·4
Etah	254	...	338·5	39·4	39·4	...	...	39·4	...	...	...	...	370·1	826·8
Allygurh	470	...	268·1	21·3	174·4	...	...	6·4	6·4	...	8·5	2·1	106·4	593·6
Bolundshuhur	139	36·0	568·3	7·2	64·7	...	...	...	...	...	7·2	...	165·5	848·9
Shahjehanpore	254	3·9	255·9	35·1	66·9	...	...	7·9	...	...	19·7	...	370·1	759·5
Budaon	295	...	115·2	6·8	78·0	...	...	13·6	...	...	...	..	210·1	423·7
Bareilly, Central	975	...	285·1	50·3	117·9	...	...	11·3	...	1·0	19·5	...	218·5	703·6
„ District	625	...	348·8	56·0	108·8	...	1·6	12·8	1·6	..	14·4	...	270·4	814·4
Moradabad	333	...	255·3	6·0	129·1	...	3·0	60·1	...	3·0	24·0	...	153·1	633·6
Almorah	168	...	184·5	17·8	101·2	...	11·9	53·6	...	...	...	...	142·9	511·9
Deyrah	58	86·2	396·6	...	327·6	...	...	34·5	...	...	..	...	224·1	1069·0
Bijnore	197	...	203·0	...	76·2	...	...	40·6	.	...	...	...	167·5	487·3
Saharunpore	299	...	354·5	...	97·0	...	10·0	123·7	3·4	...	3·4	...	648·8	1240·8
Mozuffernuggur	129	...	147·3	7·8	54·3	...	38·7	15·5	...	...	...	...	131·8	395·4
Meerut, Central	877	20·5	790·2	2·3	293·0	...	4·6	82·1	...	2·3	30·8	...	255·4	1481·2
„ District	363	...	1471·1	126·7	471·1	2·7	8·3	99·2	...	...	55·1	...	454·5	2688·7
	6,088	4·8	430·7	28·1	166·7	·2	4·1	42·7	1·3	·8	16·1	·2	260·3	946·0
Delhi	321	...	950·2	18·7	193·1	...	21·8	56·1	3·1	9·4	...	...	168·2	1420·6
Goorgaon	153	...	1300·7	...	209·2	...	6·5	202·6	...	13·1	..	...	751·6	2483·7
Rohtuck	198	...	262·6	20·2	50·5	...	...	35·4	...	...	.	...	151·5	520·2
Hissar	219	...	718·8	...	54·8	4·6	13·7	63·9	...	...	...	...	205·5	1061·3
Sirsa	279	...	713·2	..	35·8	...	...	28·7	...	...	...	...	215·1	992·8
Kurnaul	221	...	438·9	...	36·2	...	..	58·8	...	...	...	...	95·0	628·9
Umballa	670	22·4	511·9	1·5	52·2	1·5	1·5	16·4	1·5	...	19·4	...	120·9	749·2
„ Gang at Roopar	489	30·7	1462·2	147·3	556·2	..	22·5	67·5	...	2·0	32·7	2·0	728·0	3051·1
Loodianah	292	24·0	602·7	61·6	185·0	...	17·1	27·4	...	3·4	17·1	..	387·0	1325·3
Jullundur	340	5·9	147·1	...	123·5	...	...	5·9	5·9	...	11·7	23·5	305·9	629·4
Ferozepore	413	..	84·8	4·8	50·9	...	...	26·6	...	...	7·3	...	145·2	319·6
Umritsur	656	..	1606·7	306·1	105·2	...	...	25·9	1·5	..	4·6	1·5	172·3	2224·1
Lahore, Central	2,344	20·1	934·7	13·7	107·5	·4	6·8	23·4	1·7	..	3·0	...	25·2	1136·5
„ Female	160	...	1437·5	43·7	187·5	...	112·5	31·2	6·3	6·3	12·5	6·3	450·0	2293·8
Sealkote	485	...	377·3	2·1	129·9	2·1	6·2	51·5	4·1	2·1	18·5	8·2	585·6	1187·6
Dhurmsalla	137	...	489·0	7·3	197·1	...	...	36·5	..	...	7·3	...	277·4	1014·6
Goordaspore	308	...	321·4	...	45·4	...	6·5	19·5	...	...	13·0	...	172·1	577·9
Goojranwalla	537	1·9	20·5	42·8	189·9	...	3·7	48·4	11·2	1·9	[illegible]	7·4	68·0	308·5
Goojrat	252	...	198·4	...	43·7	...	...	19·8	4·0	.	...	...	63·5	329·4
Shahpore	284	...	852·1	7·0	91·6	...	...	14·1	3·5	...	17·6	...	126·8	1112·7
Jhelum	289	...	352·9	...	173·0	...	...	34·6	...	..	3·5	3·5	93·4	660·9
Montgomery	638	...	366·8	..	64·3	...	...	156·7	...	...	...	...	169·3	757·1
Mooltan	785	...	443·3	1·3	299·4	...	1·3	61·1	...	...	3·8	...	179·6	989·8
Jhung	349	...	232·1	5·7	37·2	2·9	...	25·8	8·6	...	8·6	..	63·0	383·9
Dera Ghazee Khan	331	...	1278·0	9·1	247·7	..	3·0	69·5	...	6·0	15·1	6·0	957·7	2592·1
Dera Ismael Khan	410	...	792·7	29·3	109·8	19·5	9·7	263·4	...	...	4·9	..	451·2	1680·5
Kohat	181	16·6	989·0	93·9	309·4	16·6	27·6	121·5	...	...	16·6	...	917·1	2508·3
Bunnoo	129	...	643·4	46·5	310·1	...	...	46·5	...	...	...	15·5	488·4	1550·4
Rawulpindee	1,025	...	585·4	7·8	77·1	2·0	2·0	38·0	2·0	...	6·8	...	153·1	874·2
Peshawur	620	1·6	469·4	45·2	240·3	1·6	9·7	75·8	...	...	17·7	6·5	353·2	1221·0
	13,512	6·7	675·6	33·1	143·7	1·4	6·5	53·0	1·9	·9	8·0	2·1	233·2	1166·1
Bengal Presidency	61,359	9·1	431·2	15·5	216·6	1·4	8·2	35·9	3·6	2·5	10·7	2·6	282·5	1019·8

JAILS OF THE BENGAL PRESIDENCY, 1872.

XI.

TABLE showing the PREVALENCE of CHOLERA in each MONTH and the DISTRIBUTION of the DISEASE by STATIONS and PROVINCES.

STATIONS.	Average Strength for the Year.	Number of Admissions into Hospital in each Month. Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Admissions of the Year.	Admitted per 1,000 of Average Strength.	Total Deaths of the Year.	Died per 1,000 of Average Strength.
Presidency (Native) ...	951	...	...	...	...	...	1	13	...	1	4	...	...	19	...	12	...
Alipore ...	2,403	1	3	2	1	1	4	2	2	...	1	...	...	17	...	4	...
Baraset ...	310	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Jessore ...	528	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
Kishnaghur ...	293	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moorshedabad ...	197	...	...	...	1	...	...	...	...	...	...	...	1	2	...	2	...
Howrah ...	29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Serampore ...	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hooghly ...	419	1	...	...	...	...	1	...	...	...	...	...	...	2	...	2	...
Burdwan ...	211	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...	...
Bancoorah ...	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Purulea ...	179	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raneegunge ...	17	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Sooree ...	269	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...
Rajmehal and Pakour ...	148	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deoghur and Sub-divisions ...	101	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maldah ...	82	...	1	1	1	...	...	...	...	...	...	...	...	3	...	1	...
Dinagepore ...	387	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajshahye ...	559	...	...	3	1	1	...	...	...	...	...	...	...	5	...	2	...
Rungpore ...	251	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bogra ...	108	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mymensingh ...	398	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...
Pubna ...	135	...	...	...	3	1	...	...	...	...	...	...	...	4	...	3	...
Furreedpore ...	362	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Backergunge ...	597	...	...	...	6	...	...	...	...	1	...	1	15	23	...	10	...
Noacolly ...	164	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chittagong ...	238	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Tipperah ...	233	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dacca ...	591	...	...	1	...	1	1	1	...	1	...	...	4	9	...	3	...
Sylhet ...	416	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shillong ...	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cachar ...	115	...	...	2	1	...	...	...	...	...	...	...	...	3	...	3	...
Naga Hills ...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gowalpara ...	104	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gowhatty ...	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seebsaugor ...	93	...	...	...	...	...	...	...	...	...	...	4	...	4	...	2	...
Nowgong ...	98	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tezpore ...	178	...	...	...	...	4	2	...	...	...	...	...	...	6	...	1	...
Debrooghur ...	65	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Midnapore ...	1,097	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...
Balasore ...	162	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Cuttack ...	240	...	...	...	1	...	1	...	...	...	...	...	...	2	...	2	...
Pooree ...	93	...	...	...	...	...	...	2	...	...	...	...	...	2	...	1	...
Monghyr ...	206	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bhaugulpore, Central (9 months)	776	...	...	...	2	8	...	4	2	...	...	...	...	16	...	...	...
" District ...	420	...	...	4	1	...	3	1	...	...	...	...	...	9	...	1	...
Purneah ...	306	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Julpigoree ...	61	...	...	...	...	24	1	...	...	...	...	...	...	25	...	19	...
Darjeeling ...	52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	14,930	3	4	18	18	41	14	26	6	4	5	6	20	165	11·1	71	4·75
Chyebassa ...	91	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Ranchee ...	207	1	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...
Hazareebaugh, Central ...	726	...	...	...	...	...	1	3	...	...	...	...	...	4	...	1	...
" District ...	136	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Gyah ...	399	...	...	1	...	1	1	...	2	2	...	...	...	7	...	1	...
Patna ...	411	...	...	1	...	...	...	...	1	...	...	...	...	2	...	...	...
Dehree Ghât ...	798	...	...	...	...	...	...	25	21	...	...	...	...	46	...	13	...
Arrah ...	421	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chumparun ...	265	...	...	...	...	...	...	...	...	2	...	1	...	3	...	2	...
Mozufferpore ...	400	...	...	...	...	...	...	1	73	...	...	...	...	74	...	39	...
Chuprah ...	328	...	...	...	...	...	...	...	11	3	...	...	...	14	...	8	...
Ghazeepore ...	4[illegible]	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Benares, Central ...	1,266	...	...	...	...	...	...	6	...	...	...	...	...	6	...	5	...
" District ...	531	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	...
Mirzapore ...	261	...	...	...	...	...	...	4	3	...	...	...	...	7	...	4	...
Azimghur ...	368	...	...	...	...	...	...	...	...	...	1	...	...	9	...	7	...
Jounpore ...	293	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goruckpore ...	727	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bustee ...	368	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gondah ...	595	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baraich ...	837	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fyzabad ...	955	...	...	...	...	...	...	...	...	...	62	5	...	67	...	19	...
Sultanpore ...	524	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rae Bareilly ...	570	...	...	...	...	...	2	...	...	...	...	...	...	2	...	1	...
Pertabghur ...	303	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hurdui ...	253	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kheree ...	165	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lucknow, Central ...	1,087	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" District ...	1,039	...	...	...	...	...	...	...	3	...	...	...	...	3	...	...	...
Seetapore ...	791	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nawabgunge ...	161	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Oonao ...	246	...	...	...	...	...	...	...	4	...	...	...	...	4	...	2	...
Humeerpore ...	243	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Oraie ...	162	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Futtehghur, Central ...	878	...	...	...	...	...	...	...	1	1	...	...	...	2	...	2	...
" District ...	380	...	...	...	...	...	...	...	3	...	...	...	...	3	...	3	...

STATIONS.	Average Strength for the Year.	NUMBER OF ADMISSIONS INTO HOSPITAL IN EACH MONTH.												Total Admissions of the Year.	Admitted per 1,000 of Average Strength.	Total Deaths of the Year.	Died per 1,000 of Average Strength.
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.				
Cawnpore	365	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...
Futtehpore	365	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Banda	372	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Allahabad, Central	1,721	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	800	...	...	...	3	...	...	...	2	2	...	...	...	7	...	5	...
	21,393	1	...	2	4	2	4	40	136	10	63	6	...	268	12·5	114	5·33
Sumbulpore	97	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raepore	234	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Belaspore	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mundla	45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seonee	117	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chindwarra	52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baitool	72	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nursingpore	132	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hoshungabad	125	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nimar	85	...	...	2	...	...	1	...	2	...	...	...	...	5	...	4	...
Sehore	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nagpore	709	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bandhara	63	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wurdah	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chanda	108	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sironcha	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	2,029	...	...	2	...	...	1	...	2	...	...	...	...	5	2·4	4	1·97
Jubbulpore	660	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Dumoh	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saugor	147	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lullutpore	122	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhansi	250	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmere	314	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muttra	204	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agra, Central	1,339	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	322	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
	3,407	...	...	...	...	...	...	1	...	1	...	...	...	2	·6	...	...
Etawah	247	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mynpoorie	406	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Etah	254	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Allyghur	470	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bolundshuhur	139	...	...	...	...	...	...	...	5	...	...	...	...	5	...	3	...
Shahjehanpore	264	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...
Budaon	295	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bareilly, Central	975	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ District	625	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Moradabad	333	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Almorah	168	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deyrah	58	...	...	...	...	...	...	2	1	2	...	...	...	5	...	4	...
Bijnore	197	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Saharunpore	299	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mozuffernuggur	129	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Meerut, Central	877	...	...	...	...	...	...	...	...	18	...	...	...	18	...	10	...
„ District	363	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	6,088	...	...	...	...	...	...	3	6	20	...	...	...	29	4·8	18	[illegible]
Delhi	321	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goorgaon	163	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rohtuck	198	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hissar	219	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sirsa	279	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kurnaul	221	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umballa	670	...	...	...	...	...	...	10	5	...	...	...	...	15	...	6	...
„ Gang at Roopar	489	...	...	...	...	...	...	...	11	4	...	...	...	15	...	6	...
Loodianah	292	...	...	...	...	...	...	...	7	...	...	...	...	7	...	...	...
Jullundur	340	...	...	...	...	...	...	...	2	...	...	...	...	2	...	2	...
Ferozepore	413	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Umritsur	656	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lahore, Central	2,344	...	...	...	...	...	...	...	47	...	...	...	...	47	...	22	...
„ Female	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sealkote	485	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dhurmsalla	137	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goordaspore	308	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Goojranwalla	537	...	...	...	...	...	...	...	1	...	...	...	...	1	...	1	...
Goojrat	252	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shahpore	284	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhelum	280	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Montgomery	638	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mooltan	785	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jhung	340	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ghazee Khan	381	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dera Ismael Khan	410	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kohat	181	...	...	...	...	...	...	...	...	3	...	...	...	3	...	3	...
Bunnoo	129	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawulpindee	1,025	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peshawur	820	...	...	...	...	...	...	...	...	...	1	...	...	1	...	1	...
	13,512	...	...	...	...	...	...	10	73	7	1	...	...	91	6·7	41	3·03
BENGAL PRESIDENCY	61,359	4	4	22	23	43	19	80	223	42	69	12	20	560	9·1	248	4·04

JAILS OF THE BENGAL PRESIDENCY, 1872.

XII.

TABLE showing the MORTALITY in each JAIL, the CAUSES of DEATHS, and the RATIO of DEATHS to STRENGTH.

JAILS.	Average Strength for the Year.	Causes of Deaths.															Total Deaths of the Year.	Died per 1,000 of the Average Strength.		
		Cholera.	Smallpox.	Fevers.	Apoplexy.	Dysentery and Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Presidency ...	954	12	1	2	2	16	...	...	...	...	8	...	...	...	2	3	46	12·58	35·64	48·22
Alipore ...	2,403	4	...	4*	...	48	...	..	5	2	5	...	...	4	1	7	80†	1·67	31·62	33·29
Barasat ...	310	...	...	3	1	33	...	...	2	...	8	5	...	...	1	3	56*	...	180·65	180·65
Jessore ...	528	1	...	3	...	12	1	...	7	...	...	1	...	...	1	4	30	1·89	54·93	56·82
Kishnaghur ...	293	...	...	...	1	1	...	...	...	1	1	...	...	...	3	...	7	...	23·89	23·89
Moorshedabad ...	197	2	...	...	...	3	...	...	1	...	...	...	...	1	1	2	10	10·15	40·61	50·76
Howrah ...	29	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Serampore ...	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hooghly ...	419	2	...	...	...	30	1	...	1	...	3	...	...	...	...	1	38	4·77	85·92	90·69
Burdwan ...	211	...	...	4	...	6	...	...	...	...	...	...	...	1	...	4	15	...	71·09	71·09
Bancoorah ...	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Purulea ...	179	...	...	...	1	2	...	...	...	...	...	1	...	...	...	...	4	...	22·35	22·35
Raneegunge ...	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sooree ...	269	...	...	2	...	3	...	1	...	...	2	...	...	1	...	2	11	...	40·89	40·89
Rajmehal and Pakour	148	...	...	1	...	3	..	...	...	...	...	1	...	...	...	...	5	...	33·78	33·78
Deoghur and Sub-divisions ...	101	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2	...	19·80	19·80
Malda ...	82	1	...	...	...	2	...	...	1	...	...	...	...	...	...	...	4	12·20	36·58	48·78
Dinagepore ...	387	...	...	2	...	5	...	2	1	...	1	2	...	...	...	1	14	...	36·18	36·18
Rajshahye ...	559	2	...	...	...	2	...	...	...	...	2	4	...	2	1	...	13	3·58	19·68	23·26
Rungpore ...	251	...	...	...	...	3	...	1	...	...	...	3	...	...	..	2	9	...	35·86	35·86
Bogra ...	108	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	9·26	9·26
Mymensingh ...	396	...	...	2	...	5	...	...	2	...	2	...	1	...	1	1	14	...	35·35	35·35
Pubna ...	135	3	...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	22·22	7·41	29·63
Furreedpore ...	362	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	2	...	5·52	5·52
Backergunge ...	607	10	...	12	2	41	...	...	9	...	1	1	1	...	...	...	77	16·75	112·23	128·98
Noacolly ...	164	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	2	...	12·20	12·20
Chittagong ...	238	...	...	...	...	...	...	...	4	1	...	1	...	...	...	...	6	...	25·21	25·21
Tipperah ...	233	...	...	...	...	...	...	...	1	...	2	...	...	1	...	...	4	...	17·17	17·17
Dacca ...	591	3	...	2	...	1	...	...	1	...	1	...	...	...	...	1	9	5·08	10·15	15·23
Sylhet ...	416	...	...	3	...	10	...	...	...	...	...	3	...	2	2	1	21	...	50·48	50·48
Shillong ...	36	...	...	...	...	1	...	...	...	2	...	...	...	1	...	...	4	...	111·11	111·11
Cachar ...	115	3	...	...	..	...	...	...	...	...	...	...	...	...	...	...	3	26·09	...	26·09
Naga Hills ...	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gowalparah ...	104	..	...	...	...	2	...	...	...	...	...	...	...	1	1	...	4	.	38·46	38·46
Gowhatty ...	75	...	...	...	..	1	...	...	...	...	...	...	...	...	...	...	1	...	13·33	13·33
Seebsaugor ...	93	2	...	...	..	1	...	1	.	.	..	2	...	2	...	...	8	21·50	64·52	86·02
Nowgong ...	96	...	...	...	...	1	...	...	...	...	...	1	..	...	...	...	2	...	20·83	20·83
Tezpore ...	178	1	...	...	...	2	..	...	1	..	...	...	...	1	...	...	5	5·62	22·47	28·09
Debrooghur ...	65	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	15·38	15·38	30·77
Midnapore ...	1,097	...	...	6	...	70	1	...	14	...	4	1	...	1	3	7	107	...	97·54	97·54
Balasore ...	162	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	6·17	6·17	12·34
Cuttack ...	240	2	...	2*	...	4	...	...	1	..	...	...	..	.	...	1	10	8·33	33·34	41·67
Pooree ...	93	1	...	...	..	4	...	...	...	..	...	.	..	..	...	1	6	10·75	53·77	64·52
Monghyr ...	299	...	...	1	...	3	..	...	...	...	2	...	...	3	...	...	9	...	30·10	30·10
Bhaugulpore Central (9 months) ...	776	...	...	4	...	7	...	1	...	1	...	...	...	...	1	1	15	..	19·33	19·33
Bhaugulpore District...	420	1	...	2	...	19	...	...	1	...	...	2	...	5	...	1	31	2·38	71·43	73·81
Purneah ...	306	..	..	..	...	6	1	2	1	..	3	1	...	3	...	3	20	...	65·36	65·36
Julpigoree " ...	61	19	...	2	...	4	...	..	...	.	...	...	...	1	...	...	26	311·48	114·75	426·23
Darjeeling ...	52	...	...	..	...	1	...	...	..	...	...	...	...	...	...	1	2	.	38·46	38·46
	14,930	71	2	59	7	358	4	8	53	7	46	20	2	30	18	48	742	4·75	44·95	49·70
Chyebassa ...	91	...	...	1	...	2	...	...	1	...	...	...	...	...	...	...	4	...	43·96	43·96
Ranchee ..	207	...	..	...	...	1	..	...	1	...	...	...	...	1	...	1	4	...	19·32	19·32
Hazareebaugh, Central	726	1	1	2	...	1	...	...	2	...	...	...	..	...	...	1	8	1·38	9·64	11·02
" District	136	...	...	1	..	2	...	...	1	...	...	1	...	.	...	1	6	...	44·12	44·12
Gyah ...	399	1	...	1	...	24	...	...	1	...	..	1	...	...	...	...	28	2·51	67·67	70·18
Patna ...	411	...	..	1	..	7	...	...	1	...	2	...	...	1	2	1	15	..	36·50	36·50
Dehree Ghât working gang ...	798	13	...	4	1	29	...	...	9	...	1	1	...	..	2	2	62	16·29	61·40	77·69
Arrah ...	421	.	1	2*	...	5	...	...	2	...	1	...	...	..	...	3	14	.	33·25	33·25
Chumparun ...	255	2	2	4	...	15	...	...	2	...	.	1	...	3	1	3	33	7·84	121·57	129·41
Mozufferpore ...	400	39	...	...	...	36	...	...	2	...	2	...	...	1	...	4	84	97·50	112·50	210·00
Chuprah ...	328	8	...	1	...	9	...	..	...	...	1	...	...	...	...	..	19	24·39	33·54	57·93
Ghazeepore ...	499	...	...	...	...	10	...	...	...	...	...	.	...	2	...	3	15	..	30·06	30·06
Benares, Central ...	1,266	5	...	1	.	25	...	...	...	..	10	9	...	...	...	3	53	3·95	37·91	41·86
" District ...	531	1	..	...	...	7	...	...	2	..	2	...	...	...	1	...	13	1·88	22·60	24·48
Mirzapore ...	261	4	...	1	1	7	...	...	1	...	1	...	...	...	...	...	15	15·33	42·14	57·47
Azimghur ...	368	7	...	1	...	15	...	...	4	...	...	...	...	2	1	1	31	19·02	65·22	84·24
Jounpore ...	293	..	...	...	...	15	...	...	3	..	.	...	...	8	...	1	27	...	92·15	92·15
Goruckpore ...	727	...	..	2	...	80	...	2	1	...	1	...	...	3	1	2	92	...	126·55	126·55
Bustee ...	363	...	...	2	...	10	...	...	4	1	...	...	...	...	1	4	22	...	60·60	60·60
Gondah ...	595	...	...	1	...	2	...	...	2	1	1	...	...	7	2	9	25	...	42·02	42·02
Baraich ...	337	...	..	1	...	5	...	...	6	...	...	...	...	..	...	...	12	...	35·61	35·61
Fyzabad ...	955	19	2	1	...	53	...	...	...	...	2	...	...	...	...	3	80	19·90	63·87	83·77
Sultanpore ...	524	...	...	1	...	11	...	...	1	...	...	...	...	...	1	...	14	...	26·72	26·72
Rae Bareilly ...	576	1	...	3	...	8	...	...	1	...	5	...	...	...	1	2	21	1·74	34·72	36·46
Pertabghur ...	303	...	...	2	1	4	...	...	...	1	1	...	..	...	...	...	9	...	29·70	29·70
Hurdui ..	253	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2	...	7·90	7·90
Kheree ...	165	...	...	...	...	1	...	...	3	...	2	..	...	...	1	1	8	...	48·48	48·48
Lucknow, Central ...	1,687	...	...	1	...	31	...	...	3	...	8	1	...	8	...	3	55	...	32·60	32·60
" District ...	1,039	...	...	...	...	22	...	...	1	1	4	1	...	6	1	3	39	...	37·54	37·54
Seetapore ...	791	...	...	...	...	4	1	...	2	...	...	...	...	...	...	2	9	...	11·38	11·38
Nawabgunge ...	161	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	6·21	6·21
Oonao ...	246	2	...	...	...	2	...	...	1	...	...	...	...	...	...	...	5	8·13	12·20	20·33

* One returned as Enteric Fever.

† Chiefly sickly prisoners sent for change of air from the Alipore Jail.

JAILS.	Average Strength for the Year.	Causes of Deaths.															Total Deaths of the Year.	Died per 1,000 of the Average Strength.		
		Cholera.	Smallpox.	Fevers.	Apoplexy.	Dysentery and Diarrhœa.	Hepatitis.	Spleen Disease.	Respiratory Diseases.	Heart Diseases.	Phthisis Pulmonalis.	Dropsy.	Scurvy.	Atrophy and Anæmia.	Wounds and Accidents.	All other Causes.		A. Cholera.	B. All other Causes.	C. All Causes.
Humeerpore ...	242	...	...	1	...	4	...	...	1	...	...	...	...	...	...	...	6	...	21·79	24·79
Oraie ...	162	...	...	1	...	2	...	...	2	...	1	...	...	..	...	...	6	...	37·04	37·04
Futtehghur, Central	878	3	...	...	...	10	...	..	1	.	4	1	...	...	1	3	22	2·28	22·78	25·06
" District	380	2	...	...	...	1	...	...	...	1	...	...	...	...	...	1	6	7·90	7·90	15·80
Cawnpore	365	1	...	1	...	3	...	...	...	...	1	...	...	..	1	6	12	2·74	30·14	32·88
Futtehpore .	365	...	...	1	...	2	1	..	3	...	2	1	...	1	...	1	12	...	32·88	32·88
Banda ...	372	...	...	1	...	12	...	...	6	...	...	...	..	1	.	3	23	...	61·83	61·83
Allahabad, Central ...	1,721	...	...	1	...	22	...	...	8	...	3	..	...	4	1	12	51	..	29·63	29·63
" District ...	800	5	...	...	..	7	...	1	4	...	...	...	...	2	...	1	17	6·25	15·00	21·25
	21,393	114	6	40	3	507	2	3	80	5	55	17	...	50	18	80	980	5·33	40·48	45·81
Sumbulpore ...	97	...	...	..	...	1	...	...	...	...	...	...	...	1	..	..	2	...	20·62	20·62
Raepore ...	234	...	...	1	..	1	...	...	...	...	1	...	...	...	..	...	3	...	12·82	12·82
Belaspore ..	53	...	...	..	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Mundla ..	45	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Seonee ...	117	...	...	1	...	8	...	...	1	..	1	1	...	...	...	...	12	...	102·56	102·56
Chindwarra ..	52	...	..	...	...	5	...	1	...	...	...	...	...	1	...	...	7	...	134·62	134·62
Baitool ...	72	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...	3	...	41·67	41·67
Nursingpore ..	132	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	2	...	15·15	15·15
Hoshungabad ...	125	...	...	1	...	3	...	...	...	...	...	...	...	1	..	..	5	...	40·00	40·00
Nimar (Khundwah) ...	85	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	47·06	...	47·06
Sehore ...	71	...	...	...	...	4	...	...	...	...	...	..	...	...	1	1	6	...	84·51	84·51
Nagpore ...	709	...	...	2	..	5	...	1	4	...	...	..	1	5	...	1	19	...	26·80	26·80
Bandhara ...	63	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	15·87	15·87
Wurdah .	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
Chanda ...	108	...	...	2	...	...	...	...	...	...	...	2	...	4	...	...	8	...	74·07	74·07
Sironcha ...	16	...	...	...	...	...	...	..	..	...	...	...	...	...	..	...	...	...	..	...
	2,029	4	...	9	...	29	..	3	5	...	2	3	1	13	1	2	72	1·97	33·52	35·49
Jubbulpore ...	660	...	...	1*	...	33	...	...	1	..	...	...	...	2	...	6	43	...	65·15	65·15
Dumoh ...	49	..	...	...	...	...	...	..	...	...	...	1	...	...	...	1	2	...	40·81	40·81
Saugor ...	147	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	13·61	13·61
Lullutpore ...	122	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	16·40	16·40
Jhansi ...	250	...	...	1	...	2	..	1	3	...	...	...	...	1	...	1	9	...	36·00	36·00
Ajmere ...	314	...	...	2	...	7	...	...	9	1	...	...	...	...	...	...	19	...	60·51	60·51
Muttra ...	204	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	9·80	9·80
Agra, Central ...	1,339	...	...	...	...	6	...	..	3	...	3	...	...	3	1	6	22	...	16·43	16·43
" District ...	322	...	...	...	1	3	...	..	1	...	...	...	..	...	1	...	6	...	18·63	18·63
	3,407	..	.	4	1	55	...	1	17	1	3	1	...	6	2	16	107	...	31·41	31·41
Etawah ...	247	...	...	..	...	...	...	...	1	...	1	...	...	...	...	...	2	...	8·10	8·10
Mynpoorie ...	406	...	...	1	...	3	...	...	1	...	1	...	..	...	...	1	7	...	17·24	17·24
Etah ...	254	...	...	...	..	1	...	...	...	...	...	...	...	...	...	1	2	...	7·87	7·87
Allyghur ...	470	...	...	1	...	3	...	...	1	...	2	...	..	1	...	2	10	...	21·28	21·28
Bolundshuhur ...	139	3	...	1	...	1	...	1	...	...	...	...	...	...	...	1	7	21·58	28·78	50·36
Shahjehanpore .	254	1	...	1	...	5	...	...	2	.	...	...	...	...	..	...	9	3·95	31·48	35·43
Budaon ..	295	...	...	...	...	4	...	...	4	...	...	...	...	...	..	...	8	...	27·12	27·12
Bareilly, Central ...	975	...	...	2	...	40	..	...	2	...	2	1	...	2	...	5	54	...	55·38	55·38
" District ...	625	...	...	2	...	20	...	...	...	...	..	...	...	...	..	2	24	...	38·40	38·40
Moradabad ...	333	...	...	...	...	2	...	...	2	...	...	...	...	...	...	...	4	...	12·01	12·01
Almorah ...	168	...	...	2	...	4	...	...	...	...	...	1	...	...	...	...	7	...	41·67	41·67
Deyrah ...	58	4	...	...	...	2	...	...	...	...	...	...	...	...	...	1	7	68·96	51·73	120·69
Bijnore ...	197	...	...	...	...	3	...	..	1	..	...	...	...	1	...	...	5	...	25·38	25·38
Saharunpore ...	299	...	...	1	...	4	...	...	3	..	1	...	...	1	...	..	10	...	33·44	33·44
Mozuffernuggur ...	129	...	...	...	...	..	...	1	...	...	...	...	...	...	...	...	1	...	7·75	7·75
Meerut, Central ...	877	10	...	6	...	63	...	...	14	...	...	1	1	8	1	...	104	11·40	107·19	118·59
" District ...	363	...	...	2	...	31	..	...	12	...	...	...	...	1	..	...	46	...	126·72	126·72
	6,088	18	...	19	..	186	...	2	43	.	7	3	1	14	[illegible]	13	307	2·96	47·47	50·43
Delhi ...	321	...	...	6	...	4	...	...	4	...	...	2	...	...	...	3	19	...	59·19	59·19
Goorgaon ...	153	...	...	...	...	..	...	...	...	...	...	...	...	...	..	..	...	...	...	...
Rhotuck ...	198	...	...	1	...	...	...	...	2	...	...	...	...	...	..	.	3	...	15·15	15·15
Hissar ...	219	...	...	1	1	2	...	...	2	1	1	...	..	...	...	1	9	...	41·10	41·10
Sirsa ...	279	...	...	...	...	...	...	..	2	...	...	...	...	...	1	..	3	...	10·75	10·75
Kurnaul ...	221	...	...	...	...	...	...	...	3	...	...	...	...	..	...	1	4	...	18·10	18·10
Umballa ...	670	6	...	5	...	3	...	...	3	...	1	...	...	4	..	3	25	8·95	28·36	37·31
Roopur ...	489	6	...	5	...	..	...	...	...	...	...	..	..	...	...	4	15	12·27	18·40	30·67
Loodianah ...	292	...	...	...	...	6	...	...	...	..	...	.	...	1	...	2	9	...	30·82	30·82
Jullundur ...	340	2	...	...	...	2	...	...	.	...	...	...	1	...	2	...	7	5·88	14·71	20·59
Ferozepore ...	413	...	...	...	...	...	...	...	1	...	...	...	...	..	...	1	2	...	4·84	4·84
Umritsur ...	656	...	...	42†	1	17	...	...	7	...	2	...	...	1	...	1	71	...	108·23	108·23
Lahore, Central ...	2,344	22	...	31	...	45	1	...	17	..	4	1	...	...	...	1	122	9·39	42·66	52·05
" Female Jail ...	160	...	...	3	...	2	...	...	1	...	1	1	...	...	..	1	9	..	56·25	56·25
Sealkote ...	485	...	...	...	...	3	...	...	2	...	2	...	...	...	...	2	9	...	18·56	18·56
Dhurmsalla ...	137	...	...	1	...	...	...	...	1	...	...	...	...	..	...	...	2	...	14·60	14·60
Goordaspore ...	308	...	...	1	...	3	...	...	3	...	1	..	...	1	...	...	9	...	29·22	29·22
Goojranwalla ...	537	1	...	1	...	7	...	..	3	2	1	1	...	...	..	2	18	1·86	31·66	33·52
Goojrat ...	252	...	...	...	...	...	...	...	2	..	...	...	...	...	...	...	2	...	7·94	7·94
Shahpore ...	284	...	...	1	...	6	...	...	4	...	1	...	..	1	..	...	13	...	45·78	45·78
Jhelum ...	289	...	...	...	..	4	...	...	3	...	...	...	...	...	...	...	7	...	24·22	24·22
Montgomery ...	638	...	...	...	...	2	...	...	7	...	...	...	...	...	1	...	10	...	15·67	15·67
Mooltan ...	785	...	...	1	...	7	...	...	7	...	...	...	...	...	1	...	16	...	20·38	20·38
Jhung ...	349	...	...	...	...	...	...	...	1	...	...	...	.	...	...	...	1	...	2·87	2·87
Dera Ghazee Khan ...	331	...	...	...	...	1	...	..	3	...	...	...	...	...	1	1	6	...	18·13	18·13
Dera Ismael Khan ...	410	...	...	1	...	2	...	...	7	...	...	...	...	...	...	2	12	...	29·27	29·27
Kohat ...	181	3	...	...	...	2	1	...	...	...	...	...	...	...	...	...	6	16·57	16·57	33·15
Bunnoo ...	129	...	...	...	1	2	...	...	2	...	...	...	...	..	...	...	5	...	38·76	38·76
Rawulpindee ...	1,025	...	...	1	1	6	1	...	4	...	...	...	...	...	...	1	14	...	13·66	13·66
Peshawur ...	620	1	...	6	...	14	...	...	8	..	..	...	...	3	3	3	38	1·61	59·60	61·11
	13,512	41	...	107	4	140	3	...	99	3	14	5	1	11	9	29	466	3·03	31·46	34·49
BENGAL PRESIDENCY	61,359	248	8	238	15	1,275	9	17	297	16	127	58	5	124	49	188	2,674	4·04	39·54	43·58

* Returned as Enteric Fever.

† Of these 28 were returned as cases of Contagious Relapsing Fever.

JAILS OF THE BENGAL PRESIDENCY, 1872.

XIII.

DETAIL of the ADMISSIONS and DEATHS of the JAIL POPULATION of each PROVINCE.

(A Summary of the Annual Returns of the Jails of the Presidency.)

CAUSES OF ADMISSIONS AND DEATHS.	BENGAL PROPER AND ASSAM.		CHOTA NAGPORE, BEHAR PROVINCES, BENARES, OUDE, AND CAWNPORE.		CENTRAL PROVINCES (EXCLUDING JUBBULPORE AND SAUGOR.)		AGRA AND CENTRAL INDIA.		MEERUT AND ROHILCUND.		PUNJAB.	
	Strength ... 14,930 Admissions... 18,326 Deaths ... 742		Strength ... 21,393 Admissions... 16,777 Deaths ... 980		Strength ... 2,020 Admissions... 3,178 Deaths ... 72		Strength ... 3,407 Admissions... 2,875 Deaths ... 107		Strength ... 6,088 Admissions... 5,758 Deaths ... 307		Strength ... 13,512 Admissions... 15,757 Deaths ... 466	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Cholera ...	171	71	270	114	5	4	2	...	34	18	77	41
Smallpox ...	4	2	45	6	...	...	...	...	2	...	11	...
Chickenpox ...	18	...	22	...	...	...	...	...	...	...	1	...
Measles ...	5	...	1	...	...	...	2	...	...	...	9	...
Mumps ...	26	...	330	...	10	...	7	...	15	...	13	...
Influenza ...	4	...	...	...	...	...	...	...	...	...	9	...
Dengue ...	713	...	86	...	...	...	303	...	13	...	6	...
Pyæmia ...	3	3	...	1	...	...	...	...	...	...	...	...
Erysipelas ...	41	1	8	2	1	...	5	2	4	...	25	5
Gangrene and Phagedæna ...	...	3	35	13	...	...	...	2	2	1	...	2
Enteric Fever ...	5	2	4	1	...	...	2	1	...	...	1	...
Intermittent Fever ...	6,605	29	5,769	13	1,376	6	1,002	...	2,624	10	9,149	28
Remittent and Continued Fevers ...	17[illegible]	28	98	26	26	3	22	3	169	9	482*	70*
Rheumatism, Acute ...	167	...	111	...	36	...	26	1	65	...	79	...
" Chronic ...	85	...	81	...	54	...	7	...	14	...	40	...
" Muscular ...	133	...	77	...	9	...	6	...	4	...	35	...
Gout ...	...	..	...	...	...	...	...	...	1	...	...	...
Leprosy ...	27	5	29	1	9	...	2	1	2	1	1	...
Elephantiasis ...	9	...	2	...	...	...	...	...	...	...	...	...
Scurvy ...	80	2	4	...	34	1	15	...	1	1	33	1
Anæmia ...	77	...	25	...	4	...	2	...	2	...	48	...
General Dropsy ...	79	17	23	9	4	3	1	1	2	2	5	1
Cancer ...	1	1	2	1	...	...	...	...	...	...	3	1
Primary Syphilis ...	90	...	127	...	11	...	33	...	33	...	49	...
Secondary Syphilis ...	79	...	72	...	15	1	16	...	42	1	62	1
Phthisis Pulmonalis ...	108	46	72	55	1	2	6	3	8	7	25	14
Scrofula and Tuberculosis ...	4	...	10	1	1	...	...	...	4	...	2	...
Encephalitis ...	1	1	3	6	2	...	...	...	1	1	...	...
Meningitis ...	...	1	4	1	...	...	...	...	2	...	...	...
Apoplexy ... Sunstroke ...	10	7	10	[illegible]	...	...	2	1	6	1	13	4
Paralysis ...	8	2	18	...	1	...	4	3	...	1	5	1
Tetanus ...	2	2	2	1	1	1	...	...	1	...	3	3
Epilepsy ...	37	1	25	4	2	...	3	2	9	1	3	1
Hysteria ...	1	...	...	...	...	...	1	...	2	..	...	...
Paralysis Agitans ...	...	...	...	...	...	...	...	...	...	...	1	...
Chorea ...	2	...	...	...	...	...	...	...	1	...	...	...
Neuralgia ...	34	...	18	...	5	...	2	...	10	...	34	...
Mania ...	69	1	36	...	9	...	...	...	11	...	8	...
Dementia ...	28	...	6	...	1	...	...	...	1	...	7	...
Melancholia ...	2	...	1	...	...	...	...	...	...	...	...	...
Amaurosis and Cataract ...	3	...	...	...	...	...	...	...	...	..	1	...
Nyctalopia ...	1	...	...	...	...	...	...	...	...	..	...	...
Ophthalmia ..	143	...	251	...	35	...	47	...	96	...	179	...
Otitis ...	31	...	27	...	13	...	13	...	17	...	22	...
Caries of Mastoid Cells ...	...	...	4	1	1	...	...	...	...	..	2	2
Epistaxis ...	10	...	1	...	2	...	1	...	1	...	3	...
Ozæna ...	...	...	1	...	...	...	4	...	3	...	8	1
Pericarditis ..	...	2	7	7	...	...	2	1	1	1	..	...
Valve Disease of Heart ..	9	5	2	3	...	...	...	...	...	...	...	...
Hypertrophy of Heart ...	1	...	1	...	...	...	2	...	2	...	4	3
Fatty Degeneration of Heart ...	1	1	2	2	...	...	1	1	...	...	...	...
Aortic Aneurism ..	2	1	...	...	...	...	...	...	...	...	.	...
Palpitation ..	...	...	...	...	...	...	...	...	...	...	1	...
Syncope ..	1	...	...	...	1	..	...	...	...	...	...	...
Angina pectoris ...	1	...	...	...	...	.	...	...	...	...	...	...
Phlebitis ...	10	...	...	...	...	...	...	...	...	..	...	...
Inflammation of Inguinal Glands ...	37	...	24	...	11	...	12	...	11	...	19	...
" of other Glands ...	23	...	7	...	...	...	...	...	5		2	...
Goitre ...	3	...	1	...	...	...	...	...	...	...	...	...
Laryngitis ...	1	...	3	...	...	...	4	1	6	...	3	3
Bronchitis ...	33	6	201	13	54	...	89	5	146	15	317	15
Asthma ...	75	3	74	5	11	2	13	...	10	...	16	4
Pneumonia ...	95	40	142	55	16	3	35	11	50	26	249	67
Gangrene of Lungs ...	2	2	...	2	...	...	...	...	...	...	...	...
Pleurisy ...	113	2	24	5	8	...	10	...	35	2	65	9
Pulmonary extravasation ...	43	...	8	...	3	...	1	...	1	...	7	...
Odontalgia ..	3	...	6	...	5	...	...	...	...	...	11	...
Stomatitis ...	29	...	2	...	4	...	4	...	3	..	4	...
Tonsillitis ...	8	...	12	...	...	...	7	...	9	...	29	1
Gastritis ...	5	4	2	2	1	...	...	...	...	...	5	...
Enteritis ...	4	5	7	[illegible]	...	...	2	2	4	2	3	5
Peritonitis ...	3	4	4	3	...	...	...	...	1	...	4	2
Hernia ...	11	2	10	...	1	...	...	...	...	...	5	...
Ileus ...	...	..	...	..	...	...	...	...	...	...	1	2
Hæmatemesis ..	1	...	...	...	1	...	...	...	...	...	...	...
Dyspepsia ...	687	...	166	...	25	...	17	...	69	...	179	...
Colic ...	163	...	248	...	48	...	32	...	47	...	303	...
Constipation ...	51	...	32	...	29	...	2	...	20	...	116	...
Dysentery ...	2,763	274	2,430	370	280	16	297	44	641	130	1,013	93
Diarrhœa ...	2,480	84	1,632	137	237	13	188	11	311	56	815	47
Hæmorrhoids ...	42	...	74	...	13	...	12	...	11	...	21	...
Fistula in Ano ...	15	...	2	...	1	...	3	...	4	...	2	...
Stricture of Rectum ...	...	...	1	1	...	...	...	...	...	...	...	...
Worms, ascarides ...	3	...	2	...	1	...	2	...	...	...	1	...
Tapeworm ...	3	...	...	...	1	...	...	...	...	...	6	...
Spleen enlargement ...	205	8	73	3	15	3	8	1	23	2	89	...
Rupture of Spleen ...	...	1	...	...	...	...	...	...	...	...	...	...

---

* Of these 201 were cases of Relapsing Fever, which occurred in the Jail at Umritsur. Out of these there were 28 Deaths.

CAUSES OF ADMISSIONS AND DEATHS.		Bengal Proper and Assam.		Chota Nagpore, Behar Provinces, Benares, Oudh, and Cawnpore.		Central Provinces (excluding Jubbulpore and Saugor.)		Agra and Central India.		Meerut and Rohilcund.		Punjab.	
		Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Hepatitis	...	31	4	27	2	3	...	...	...	1	...	18	3
Cirrhosis	...	3	2	...	2	...	...	...	...	...	...	...	...
Cyst of Liver	...	...	...	...	...	...	...	...	...	...	1	...	...
Jaundice	...	64	1	43	2	4	...	8	...	12	...	17	1
Ascites	...	21	12	4	8	...	...	...	...	2	1	6	4
Nephritis	...	11	2	9	10	...	...	1	...	1	...	6	...
Cystitis	...	2	...	...	...	...	...	...	...	1	...	1	...
Hæmaturia	...	8	...	5	...	...	...	...	...	...	...	...	...
Calculus and Lithiasis	...	2	1	4	...	...	...	...	...	2	...	...	...
Diuresis and Diabetes	...	5	...	...	...	...	...	1	...	...	...	2	...
Enuresis	...	...	...	...	...	1	...	1	...	...	...	...	...
Stricture of Urethra	...	8	...	5	...	2	...	...	...	1	...	4	...
Urinary Abscess	...	...	...	2	2	...	...	1	1	...	...	...	...
Gonorrhœa	...	46	...	22	...	6	...	6	...	7	...	17	...
Phimosis	...	10	...	20	...	5	...	3	...	3	...	...	...
Orchitis	...	51	...	36	...	5	...	6	...	7	...	12	...
Hydrocele	...	20	...	12	...	4	...	1	...	...	...	2	...
Hæmatocele	...	1	...	...	...	3	...	...	...	...	...	...	...
Varicocele	...	...	...	1	...	...	...	...	...	...	...	...	...
Periostitis	..	8	...	3	...	2	...	2	...	1	...	3	...
Necrosis	...	1	...	3	...	...	...	1	...	1	...	3	...
Synovitis and Inflammation of Bursæ		20	...	12	...	1	...	4	...	4	...	6	...
Phlegmon and Abscess	...	400	2	848	2	230	...	106	...	411	1	521	...
Ulcer	...	272	...	1,008	...	185	...	201	...	231	...	415	...
Whitlow	...	34	...	50	...	12	...	8	...	18	...	66	...
Boils	...	85	...	98	...	49	...	31	...	44	...	166	...
Carbuncle	...	37	1	14	...	...	...	3	...	3	...	13	...
Itch	...	201	...	185	...	42	...	42	...	18	...	100	...
Urticaria	...	6	...	7	...	1	...	4	...	4	...	10	...
Eczema	...	11	...	13	...	1	...	2	...	7	...	2	...
Herpes	...	15	...	43	...	7	...	8	...	8	...	11	...
Impetigo	...	...	...	15	...	...	...	1	...	2	...	...	...
Psoriasis	...	17	...	5	...	1	...	...	...	...	...	9	...
Prurigo	...	1	...	...	...	...	...	1	...	...	...	4	...
Other Skin Diseases	...	3	...	12	...	6	...	5	1	8	...	10	...
Guineaworm	...	...	...	5	...	8	...	53	...	1	...	103	1
Tumour	...	1	...	8	...	2	...	...	...	...	...	12	...
Childbirth	...	10	...	21	...	1	...	9	...	...	...	14	...
Abortion	...	1	...	2	...	...	...	...	...	...	...	4	...
Puerperal Fever	...	...	...	...	...	...	...	...	...	...	...	1	1
Phlegmasia Dolens	...	3	...	...	...	...	...	...	...	...	...	...	...
Menorrhagia	...	5	...	8	...	...	...	...	...	...	...	3	...
Prolapsus Uteri	...	...	...	1	...	...	...	...	...	...	...	...	...
Leucorrhœa	...	1	...	1	...	...	...	...	...	...	...	...	...
General Debility	...	99	30	194	50	30	13	9	6	97	14	63	11
Delirium Tremens	...	...	...	1	...	1	...	1	...	...	...	...	...
Poisoning by Opium	...	...	...	...	...	...	...	...	...	...	...	3	...
" by Vegetable Poisons	...	...	...	3	1	...	...	2	...	...	...	...	...
Snake-bite	...	2	...	2	1	...	...	...	...	...	...	4	...
Burning	..	32	...	42	...	7	...	2	...	8	...	5	...
Wound and Contusion	...	457	8	791	15	81	...	59	1	169	...	292	7
Fracture	...	27	...	127	...	9	...	15	...	63	...	34	...
Dislocation	...	11	...	6	...	1	...	...	...	2	...	6	...
Sprain	...	15	...	39	...	16	...	3	...	6	...	13	...
Murder and Homicide	...	...	1	...	...	...	...	...	...	...	...	...	...
Suicide and Suicidal Wounds	...	...	7	3	1	1	1	1	...	...	...	...	...
Drowning	...	...	1	...	...	...	...	...	1	...	1	...	...
Punished	...	28	...	84	...	16	...	...	...	3	...	3	...
Surgical Operations	...	...	...	...	...	1	...	...	...	...	...	...	...
Cause not ascertained	...	...	1	9	5	...	...	1	...	...	...	1	...

GENERAL SUMMARY FOR 1872.

DETAIL of the ADMISSIONS and DEATHS of the EUROPEAN ARMY of INDIA, and of the NATIVE ARMY and JAIL POPULATION of the BENGAL PRESIDENCY.

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL AND DIED IN AND OUT OF HOSPITAL.											
	ARMY OF BENGAL.		ARMY OF MADRAS.		ARMY OF BOMBAY.		ARMY OF INDIA.		NATIVE ARMY OF BENGAL.		JAIL POPULATION OF BENGAL.	
	Strength ... 36,591 Admissions ... 59,513 Deaths .. 1,001		Strength ... 11,369 Admissions... 16,139 Deaths ... 219		Strength ... 10,734 Admissions... 10,767 Deaths ... 204		Strength ... 58,694 Admissions... 86,419 Deaths ... 1,424		Strength ... 53,247 Admissions... 81,404 Deaths ... 1,257		Strength ... 61,359 Admissions ... 62,671 Deaths ... 3,074	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Cholera ...	589	389	2	2	43	36	634	427	369	247	559	248
Smallpox ...	25	7	18	2	13	2	56	11	64	5	62	8
Chickenpox ...	8	...	1	...	7	...	16	...	42	..	41	...
Measles ...	9	...	7	...	34	..	50	...	104	...	17	...
Mumps ...	8	...	5	...	4	...	17	...	234	...	401	...
Influenza ...	45	...	13	...	7	...	65	...	180	...	13	...
Dengue ...	3,949	...	916	...	2,466	...	7,331	...	4,542	...	1,121	...
Diphtheria ..	2	1	1	...	...	...	3	1	1	1	...	...
Scarlet Fever ..	2	1	3	...	1	...	6	1	...	...	...	...
Pyæmia ..	...	...	2	1	...	...	2	1	...	...	3	4
Hydrophobia ..	2	2	...	...	...	...	2	2	...	...	..	...
Erysipelas ...	77	5	11	1	8	1	96	7	32	2	54	10
Gangrene and Phagedæna ..	...	...	...	...	...	...	...	...	...	...	37	21
Enteric Fever ...	102	59	65	27	42	24	209	110	10	6	12	4
Intermittent Fever .	13,142	4	1,486	...	5,645	2	20,273	6	39,542	55	26,525	86
Remittent and Continued Fevers ..	4,871	61	1,549	8	845	6	7,265	75	754	75	968	118
Typhus Fever ...	...	...	...	...	...	...	...	...	1	...	...	...
Rheumatism, Acute ...	549	1	109	...	120	..	778	1	589	1	484	1
" Chronic ...	783	...	226	...	152	...	1,161	...	1,217	...	281	..
" Muscular ..	537	..	106	...	177	...	820	..	837	...	264	...
Gout ...	6	...	...	...	1	...	7	...	5	...	1	...
Leprosy ..	..	...	...	...	...	...	...	...	22	...	70	8
Elephantiasis ...	...	...	...	...	...	...	...	...	...	...	11	...
Scurvy ...	17	1	7	...	4	1	28	2	175	7	167	5
Anæmia ...	200	...	25	...	28	...	253	...	186	...	156	...
General Dropsy ...	11	...	3	...	11	...	25	...	9	1	114	33
Lupus ...	...	...	...	...	...	...	...	...	1	...	...	...
Cancer ..	5	2	1	2	3	2	9	6	2	...	6	3
Primary Syphilis ...	2,282	...	743	..	584	...	3,609	...	645	...	343	...
Secondary Syphilis ...	836	1	333	3	151	2	1,320	6	274	2	286	3
Phthisis Pulmonalis ...	334	36	121	19	97	18	552	73	121	42	218	127
Scrofula and Tuberculosis ...	24	1	9	1	5	...	38	2	22	5	21	1
Psoas Abscess ...	1	2	...	...	...	...	1	2	...	...	...	...
Hip-joint Disease ...	1	...	..	..	2	...	3	...	...	...	...	...
Encephalitis ...	16	4	1	3	3	1	20	8	4	2	7	8
Meningitis ...	26	8	5	1	1	...	32	9	...	...	6	2
Apoplexy ...	31	2	3	2	12	1	46	5	11	11	41	20
Sunstroke ...	116	56	44	20	42	27	202	109	10			
Paralysis ...	58	1	21	..	13	...	92	1	51	5	36	7
Tetanus ...	4	4	...	..	...	..	4	4	3	2	9	7
Epilepsy ...	96	...	25	..	19	1	140	1	34	1	79	9
Hysteria ...	1	...	...	...	1	.	2	...	...	...	4	...
Paralysis Agitans ...	7	...	...	...	...	.	7	...	5	...	1	...
Chorea ...	1	...	...	..	1	...	2	..	...	...	3	...
Anæsthesia ...	...	...	...	...	..	...	...	..	4	..	...	...
Hyperæsthesia ...	...	...	...	...	...	..	...	...	17	...	...	...
Neuralgia ..	319	...	93	...	48	...	460	.	473	...	103	...
Mania ...	28	1	7	...	4	...	39	1	14	...	133	1
Dementia ...	30	...	10	...	9	...	49	...	7	1	43	...
Melancholia ...	21	...	2	...	4	...	27	...	3	...	3	...
Hypochondriasis ...	6	...	4	...	...	..	10	...	1	...	...	...
Amaurosis and Cataract ...	5	...	1	...	3	...	9	...	19	.	4	..
Impaired Vision ...	13	...	10	...	10	...	33	.	...	..	...	...
Nyctalopia ...	2	...	...	...	10	...	12	...	38	...	1	...
Ophthalmia ...	879	...	220	...	195	...	1,294	...	1,686	..	751	...
Otitis ...	198	..	108	...	47	...	353	...	252	...	123	...
Deafness ...	42	...	29	...	7	...	78	...	58	..	...	...
Caries of Mastoid Cells ..	5	1	2	...	2	...	9	1	4	...	7	3
Epistaxis ...	15	...	...	...	3	...	18	...	16		18	...
Polypus nasi ...	...	...	1	...	...	...	1	...	...	.	...	...
Ozæna ...	3	...	7		2	...	12	...	5	...	16	1
Pericarditis ...	14	1	3	...	6	...	23	1	5	2	10	11
Valve disease of Heart ...	132	12	47	10	16	4	195	26	15	1	11	8
Hypertrophy of Heart ...	59	4	16	4	9	1	84	9	1	.	10	3
Fatty Degeneration of Heart	2	2	3	2	...	...	5	4	1	1	4	4
Rupture of Heart and Aorta	1	1	...	...	...	...	1	1	...	...	...	...
Rupture of Vena cava ...	...	...	...	...	1	1	1	1	..	.	.	...
Aortic Aneurism ..	35	21	18	8	7	4	60	33	7	1	2	1
Traumatic Aneurism ..	...	...	...	...	1	...	1	...	...	...	...	.
Embolism ...	1	1	...	...	1	1	2	2	...	...	...	...
Palpitation ...	467	..	60	...	46	...	570	...	7	...	1	...
Syncope ...	5	...	1	...	...	...	6	...	2	...	2	...
Angina Pectoris ...	3	...	2	...	...	...	5	...	...	...	1	...
Phlebitis ...	1		...	...	1	...	2	...	2	...	10	...
Varix ...	21	...	8	...	4	...	33	...	12	...	..	...
Inflammation of Inguinal Glands ...	535	.	314	...	191	...	1,040	...	115	...	114	...
Inflammation of other Glands	48	...	20	...	5	...	73	...	128	.	37	...
Goitre ...	2	...	...	..	...	...	2	...	74	...	4	...
Œdema Glottidis ...	1	...		...	..	...	1	...	...	...	...	...
Tumour of Larynx ...	...	...	.	...	...	..	...	...	...	1	...	...
Laryngitis ...	19	3	1	1	...	...	20	4	23	4	17	4
Bronchitis ...	1,689	5	428	..	289	1	2,406	6	1,944	71	900	54
Asthma ...	24	...	14	...	4	...	42	...	108	2	329	14
Pneumonia ...	223	35	14	...	35	4	272	39	602	112	587	202
Gangrene of Lungs ...	...	2	..	...	...	2	...	4	...	...	2	4
Pleurisy ...	134	2	25	...	30	...	189	2	187	9	255	18
Pulmonary extravasion ...	19	...	10	...	10	...	39	...	27	...	63	...
Odontalgia ...	8	...	11	.	...	..	19	...	55	...	25	...
Stomatitis ..	38	...	17	.	8	..	63	...	75	...	40	...
Tonsillitis ...	557	...	206	..	121	...	884	...	211	...	65	1

CAUSES OF ADMISSIONS AND DEATHS.	ADMITTED INTO HOSPITAL AND DIED IN AND OUT OF HOSPITAL.											
	ARMY OF BENGAL.		ARMY OF MADRAS.		ARMY OF BOMBAY.		ARMY OF INDIA.		NATIVE ARMY OF BENGAL.		JAIL POPULATION OF BENGAL.	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.
Stricture of Œsophagus ...	...	...	...	...	...	...	...	...	1	1	...	...
Gastritis ...	27	...	1	...	...	...	28	...	8	1	3	6
Enteritis ...	6	6	3	...	2	1	11	7	9	5	20	22
Peritonitis ...	21	3	3	2	6	1	30	6	7	5	12	9
Iliac Abscess ...	...	2	...	1	...	...	...	3	...	1	...	...
Periœcal Abscess ...	...	...	...	...	...	...	...	...	...	1	...	...
Hernia ...	33	...	16	...	8	...	57	...	23	...	27	2
Ileus ...	...	...	1	...	...	...	1	...	1	1	1	2
Hæmatemesis ...	4	...	...	...	3	...	7	...	5	1	2	...
Melæna ...	2	...	...	...	...	...	2	...	5	...	...	...
Dyspepsia ...	1,422	...	854	...	283	...	2,559	...	510	...	1,143	...
Colic ...	251	...	56	...	53	...	360	...	707	2	841	...
Constipation ...	38	...	17	...	7	...	62	...	198	...	250	...
Dysentery ...	1,263	64	948	32	360	13	2,571	109	4,427	67	7,433	927
Diarrhœa ...	2,772	10	823	...	689	...	4,284	10	2,976	37	5,672	348
Hæmorrhoids ...	303	...	116	...	80	...	559	...	154	...	173	...
Fistula in Ano ...	44	...	17	...	15	...	76	...	30	...	27	...
Stricture of Rectum ...	...	...	...	...	...	...	...	...	...	...	1	1
Worms, Ascarides ...	5	...	2	...	1	...	8	...	8	...	9	...
" Tapeworm ...	207	...	73	...	47	...	327	...	12	...	10	...
Disease of Supra-renal Capsules ...	1	...	...	...	...	...	1	...	...	...	...	...
Spleen Enlargement ...	239	1	22	...	37	...	298	1	671	14	503	17
Rupture of Spleen ...	...	...	...	...	...	...	...	...	...	...	...	1
Hepatitis ...	2,032	86	672	38	353	20	3,057	144	119	6	80	9
Cirrhosis ...	16	10	4	2	8	5	28	17	...	...	3	4
Cyst of Liver ...	2	...	...	...	...	...	2	...	...	...	...	1
Jaundice ...	127	...	53	...	22	...	202	...	72	5	148	4
Ascites ...	4	...	...	...	2	...	6	...	4	...	33	25
Nephritis ...	59	3	7	3	11	2	77	8	26	2	28	12
Cystitis ...	36	...	3	...	3	...	42	...	13	1	4	1
Hæmaturia ...	1	...	...	...	...	...	1	...	1	...	13	...
Calculus and Lithiasis ...	1	1	...	...	1	...	2	1	16	1	3	1
Diuresis and Diabetes ...	2	1	1	...	3	...	6	1	4	...	[illegible]	...
Enuresis ...	12	...	2	...	6	...	20	...	4	...	2	...
Stricture of Urethra ...	152	1	30	...	20	...	202	1	15	...	20	...
Urinary Abscess ...	...	1	1	...	...	...	1	1	...	...	3	3
Gonorrhœa ...	3,199	...	700	...	813	...	4,712	...	359	...	104	...
Phimosis ...	39	...	12	...	9	...	60	...	21	...	41	...
Warts ...	74	...	21	...	10	...	105	...	1	...	...	...
Epididymitis ...	114	...	19	...	33	...	166	...	33	...	117	...
Orchitis ...	476	...	108	...	84	...	668	...	244	...		...
Fungus Testis ...	...	...	...	...	...	...	...	...	1	...	...	...
Hydrocele ...	24	...	22	...	5	...	51	...	23	...	39	...
Hæmatocele ...	2	...	...	...	...	...	2	...	1	...	4	...
Varicocele ...	7	...	4	...	...	...	11	...	3	...	1	...
Periostitis ...	55	...	19	...	14	...	88	...	19	...	19	...
Exostosis ...	...	...	...	...	...	...	...	...	1	...	...	...
Necrosis ...	8	...	3	...	...	...	11	...	3	...	9	...
Synovitis and Bursal Inflammation ...	89	...	25	...	26	...	140	...	75	...	47	...
Contraction ...	11	...	9	...	3	...	23	...	6	...	...	...
Rupture of Muscle ...	1	...	...	...	1	...	2	...	...	...	...	...
Atrophy of Muscle ...	1	...	...	...	1	...	2	...	3	...	...	...
Phlegmon and Abscess ...	583	...	280	...	209	...	1,072	...	1,531	2	2,516	5
Ulcer ...	1,000	...	434	...	316	...	1,750	...	1,930	2	2,312	...
Whitlow ...	62	...	35	...	38	...	135	...	212	...	194	...
Boil ...	603	...	268	...	203	...	1,074	...	1,578	...	473	...
Carbuncle ...	8	1	11	...	4	...	23	1	27	...	70	1
Itch ...	52	...	26	...	7	...	85	...	790	...	588	...
Skin Diseases ...	504	...	165	...	128	...	797	...	669	...	260	1
Guineaworm ...	1	...	6	...	27	...	34	...	418	...	170	1
Tumour ...	19	...	11	...	11	...	41	...	19	...	29	...
Childbirth ...	...	...	...	...	...	...	...	...	...	...	65	...
Abortion ...	...	...	...	...	...	...	...	...	...	...	7	...
Puerperal Fever ...	...	...	...	...	...	...	...	...	...	...	1	1
Phlegmasia Dolens ...	...	...	...	...	...	...	...	...	...	...	3	...
Menorrhagia ...	...	...	...	...	...	...	...	...	...	...	16	...
Prolapsus Uteri ...	...	...	...	...	...	...	...	...	...	...	1	...
Leucorrhœa ...	...	...	...	...	...	...	...	...	...	...	2	...
General Debility ...	807	3	448	...	219	...	1,474	3	805	28	492	124
Delirium Tremens ...	147	5	51	4	45	2	243	11	1	[illegible]	3	...
Poisoning by Alcohol ...	7	9	...	...	9	1	16	10	6	1	...	...
" by Arsenic ...	1	...	...	...	...	...	1	...	6	...	...	...
" by Opium ...	...	...	...	...	...	...	...	...	8	4	3	...
" by Vegetable poisons ...	1	...	1	...	1	...	3	...	11	3	5	1
Snake-bite ...	...	...	...	...	...	...	...	...	5	1	8	1
Burning ...	42	...	18	...	7	...	67	...	163	...	96	...
Wound and Contusion ...	1,859	11	790	2	542	4	3,191	17	3,545	11	1,813	31
Fracture ...	150	2	54	...	33	...	237	2	107	...	275	...
Dislocation ...	34	...	13	...	8	...	55	...	34	...	26	...
Sprain ...	889	...	241	...	212	...	1,342	...	435	...	92	...
Murder and Homicide ...	1	3	1	1	...	...	2	4	...	3	...	1
Suicide and Suicidal Wounds	...	23	...	2	...	7	...	32	...	17	5	11
Drowning ...	...	15	...	8	...	6	...	29	...	7	...	3
Asphyxia ...	...	1	...	...	...	...	...	1	...	...	...	...
Killed in Action ...	...	...	...	...	...	...	...	...	...	6	...	...
Executed ...	...	...	...	1	...	...	...	1	...	...	...	...
Struck by Lightning ...	1	...	...	...	...	...	1	...	...	2	...	...
Foreign body in Œsophagus	...	...	...	...	1	...	1	...	...	...	...	...
Foot-sore ...	99	...	22	...	21	...	142	...	2,163	...	...	...
Punished ...	4	...	...	...	...	...	4	...	13	...	134	...
Surgical operations ...	9	...	2	...	1	...	12	...	2	...	1	...
Cause not ascertained ...	41	...	16	...	5	...	62	...	12	2	11	6
Absent Deaths of Native Army ...	...	...	...	...	...	...	...	...	...	342	...	...